REQUEST FOR QUALIFICATIONS (RFQ)

RFQ NO. 3001-0-2019

ARCHITECTURAL/ENGINEERING DESIGN SERVICES TO REPLACE MARTIN COUNTY SCHOOL DISTRICT'S (MCSD) JENSEN BEACH & PALM CITY ELEMENTARY SCHOOLS

PURCHASING DEPARTMENT
2845 SE DIXIE HWY STUART, FL., 34997
TEL (772) 219-1255
FAX (772) 219-1267
EMAIL bids@martin.k12.fl.us

Table of Contents

SECTION I – NOTICE OF RFQ 1

SECTION II – DEFINITIONS 3

SECTION III – GENERAL CONDITIONS 5

SECTION IV – SCOPE OF SERVICES 15
4.1 MANDATORY MEETING SCHEDULE 15
4.2 LIST OF DISCIPLINES 15
4.3 ASSIGNED TASKS 15
4.4 PROPOSED PROJECT SCHEDULE 16

SECTION V – INSURANCE REQUIREMENTS 18
5.1 COMMERCIAL GENERAL LIABILITY 18
5.2 PROFESSIONAL LIABILITY 18
5.3 AUTOMOBILE LIABILITY 18
5.4 WORKERS COMPENSATION/EMPLOYERS LIABILITY 19
5.5 INDEMNIFICATION 19

SECTION VI – INSTRUCTIONS FOR PREPARING SUBMISSIONS 20
6.1 RULES FOR SUBMISSION 20
6.2 PROPOSAL FORMAT 20
6.3 LETTER OF TRANSMITTAL 20
T1 Company Qualifications 20
T2 Task Approach 21
T3 Experience/Past Performance 21
T4 Projected Workloads 22
T5 Familiarity 22
T6 Financial Statements 22
T7 Insurance 22
T8 Disclosure Statements 22
T9 Requested Information 23
T10 Optional Information 23
T11 Addenda 23

SECTION VII – EVALUATION OF SUBMISSIONS 24
7.1 EVALUATION COMMITTEE 24
7.2 EVALUATION CRITERIA 24
7.3 EVALUATION METHOD 24
7.4 AWARD 25
7.5 PROFESSIONAL SERVICES AGREEMENT 25

SECTION VIII – ATTACHMENTS 27
A PROPOSER'S PROFILE STATEMENT 28
B PUBLIC ENTITY CRIMES STATEMENT 29

SECTION IX – PROJECT DESIGN CRITERIA & MANUAL SPECIFICATIONS 31

SECTION I

NOTICE OF REQUEST FOR QUALIFICATIONS

Sealed Qualifications packages must be received either by mail or hand delivery and time stamped in the Purchasing Office, on or before the date and time referenced below. It is the proposer's responsibility to ensure that proposals are received in the Purchasing Department. Proposals received after closing date and time or submitted to any other District office will not be accepted or considered and will be retained unopened.

Solicitation Documents may be obtained by registering with DemandStar or Vendor Registry in order to receive all required documents and notification of addenda. Register for FREE at http://www.demandstar.com/subscriptions "FREE AGENCY", toll-free 1-800-711-1712, or from the Purchasing Website: https://www.martinschools.org/Page/945.

Proposers who obtain solicitation documents from any other source are cautioned that the solicitation package may be incomplete. Furthermore, all addenda issued will be posted and disseminated by DemandStar to planholders/members. Proposers obtaining RFQ documents from the Purchasing department website must check the website daily to download their addenda.

The following meeting dates are subject to change according to the needs of the District.

RFQ Number:	3001-0-2019
RFQ Name:	Architectural/Engineering Design Services to Replace Martin County School District's (MCSD) Jensen Beach & Palm City Elementary Schools
RFQ Advertising/Publish Date:	July 29, 2019, August 5, 2019, & August 12, 2019
Mandatory Preproposal Meeting followed by Site Visits:	August 16, 2019, at 10:00am
Questions Deadline:	August 28, 2019, by no later than 2:00 PM
RFQ Closing Date/Time:	September 11, 2019, by no later than 2:00 PM
Proposed Professional Service Advisory Committee Mtg (PSAC):	September 25, 2019 at 10:00am
Proposed Interview & Shortlist Date:	October 9, 2019
Anticipated Award / Contract Date:	January 14, 2020
Contact Information:	Phone; (772) 219-1255 ext 203 Fax: (772) 219-1267 Email: bids@martin.k12.fl.us
Email Notifications:	Start all email subject lines with the RFQ number for faster recognition.
Submittal Requirements:	**ONE (1) MARKED ORIGINAL, ONE FLASHDRIVE, AND SEVEN (7) PHOTOCOPIES, OF THE COMPLETED PACKAGE** in a sealed package to the address listed below. Facsimile or electronic responses shall not be accepted.
Submit RFQ to:	Martin County School District Attn: Purchasing Department 2845 SE Dixie Hwy, Stuart, FL., 34997-5037
Mark Outside of Envelope:	The Project Name, RFQ Number, and time and date of the RFQ opening shall be clearly marked on the outside of sealed package.
RFQ Statement of Work:	Solicit Architectural/Engineering Design Services for the Replacement of Jensen Beach Elementary School and Palm City Elementary School.

Proposers may not withdraw their RFQ submittal for a period of ninety (90) calendar days after the day set for the opening of RFQs.

The District reserves the right to waive any informalities or irregularities, reject any and all proposals that are incomplete, conditional, non-responsive, or which contain additions not allowed for; to reject any or all proposals in whole or in part with or without cause; to re-advertise for proposals, to award in whole or in part to one or more Proposers, and to accept the proposal which best serves the District.

ADVERTISEMENT PUBLICATION

Martin County School Board
2845 S.E. Dixie Highway, Building 7
Stuart, FL 34997

RFQ# 3001-0-2019
ARCHITECTURAL/ENGINEERING DESIGN SERVICES
TO REPLACE MARTIN COUNTY SCHOOL DISTRICT'S (MCSD)
JENSEN BEACH & PALM CITY ELEMENTARY SCHOOLS

The School Board of Martin County, Florida, in compliance with Florida Statute 287.055, Consultants' Competitive Negotiation Act (CCNA), is seeking qualified, experienced and licensed architectural and engineering firms, including their consultants to design and for the construction engineering and inspection services for replacement of Jensen Beach Elementary School located at 2525 NE Savannah Rd, Jensen Beach, FL 34957; and Palm City elementary school located at 1951 SW 34th St, Palm City, FL 34990; which will be delivered to the District through a Construction Management at Risk contract.

Solicitation Documents may be obtained by registering with DemandStar in order to receive all required documents and notification of addenda. Register for FREE at http://www.demandstar.com/subscriptions "FREE AGENCY", toll-free 1-800-711-1712, or from the Purchasing Website: https://www.martinschools.org/Page/945 from Vendor Registry. The District is not responsible for the content of any submittal package received through any 3rd party service or any other source.

A **Mandatory Pre-proposal Meeting** will be held on **August 16, 2019 at 10:00 AM**, at the Purchasing Warehouse Facility, Service Center Conference Room, 2845 SE Dixie Highway, Building# 7, Stuart, Florida 34997. All Interested Proposers are required to attend this Mandatory Pre-proposal Meeting in order for their submittal to be considered. Proposers must sign-in on the attendance log prior to 10:00am, sign in log shall act as proof of attendance. Meeting will start promptly at 10:05am. Proposers that arrive after 10:05am will be considered late and shall not be permitted to sign the attendance log. A **site visit** at each location will follow the mandatory pre-proposal meeting. Failure to attend the mandatory site visit may be cause for disqualification of Proposer's submittal.

Firms desiring to provide the services described shall submit one (1) marked original and seven (7) copies with **one (1) electronic copy (PDF format preferred) on a flash drive** of their submittal package, containing all of the required information **no later than 2:00pm, September 11, 2019** to:

Mail/Overnight/Hand Deliver Submittal Responses to:
Martin County School District
Attn: Purchasing Department
2845 SE Dixie Hwy
Building 7
Stuart, FL., 34997-5037

Mark outside of envelope: RFQ#, Project Name, time and date of the RFQ opening

Questions: Email bids@martin.k12.fl.us

Publish Date: July 29, 2019, August 5, 2019, & August 12, 2019

SECTION II

DEFINITIONS

2.1 CONTRACT: The written agreement for performance of the Scope of Work according to the terms and conditions established by the Request for Proposals/Qualifications and entered into between the District and the successful Proposer.

2.2 CONTRACT ADMINISTRATOR: The Staff member that is designated as the representative of the DISTRICT concerning the contract documents.

2.3 CONTRACTOR/CONSULTANT: A separate and distinguishable business entity participating or seeking to participate in the performance of a contract.

2.4 DESIGN CRITERIA PROFESSIONAL: A firm who holds a current certificate of registration under F.S. Chapter 481, to practice architecture or landscape architecture or a firm who holds a current certificate as a registered engineer under F.S. Chapter 471, to practice engineering and who is employed by or under contract to the School Board for professional architect services, landscape architect services, or engineering services in connection with the preparation of the design criteria package.

2.5 DISTRICT: The Martin District School District a political subdivision of the State of Florida, and its individual and collective departments, managers, staff, and facilities.

2.6 LOBBYING: Lobbying is defined as any action taken by an individual, firm, association, joint venture, partnership, syndicate, corporation, and all other groups who seek to influence the governmental decision of a board member or District personnel after advertisement and prior to the posted recommendation on the award of the Contract.

2.7 NEGOTIATE or any form of that word means to conduct legitimate, arms length discussions and conferences to reach an agreement on a term or price. For purposes of this policy, the term does not include presentation of flat-fee schedules with no alternatives or discussion.

2.8 PROCUREMENT Buying, purchasing, renting, leasing or otherwise acquiring any goods and/or services for public purposes in accordance with the law, rules, regulations and procedures intended to provide for the economic expenditure of public funds. For the purpose of this policy, procurement refers to those goods and/or services, except professional services, solicited by the Purchasing Department pursuant to District and State Board of Education requirements.

2.9 PROFESSIONAL SERVICES means those services within the scope of the practice of architecture, professional engineering, landscape architecture, or registered land surveying, as defined by the laws of the State, or those performed by any architect, professional engineer, landscape architect, or registered land surveyor in connection with his/her professional employment or practice. Professional services include construction managers at risk as authorized by F.S. 1013.45.

2.10 PROFESSIONAL SERVICES ADVISORY COMMITTEE (EVALUATION/SELECTION COMMITTEE): District staff and/or outside consultants assigned to evaluate the submitted Qualifications per Board policy.

2.11 PROJECT: Fixed capital outlay study, planning activity or facility construction described in the public notice. The School Board shall prescribe, in compliance with State law, procedures for the determination of a project under its jurisdiction.

2.12 PROPOSER/RESPONDENT: Any individual, firm, or corporation submitting a proposal for this project, acting directly or through a duly authorized representative.

2.13 "PROVIDER", "ENGINEER OF RECORD", "CONTRACTOR" OR "CONSTRUCTION MANAGER AT RISK", "SUCCESSFUL PROPOSER" OR "CONSULTANT": The firm or individual receiving an award as a result of this RFQ. Said terms may be used interchangeably while retaining the same meaning.

2.14 PURCHASING DEPARTMENT: The Purchasing Department of the Martin District School District.

2.15 QUALIFICATIONS/PROPOSAL, shall refer to any Offer(s) submitted in response to this Request for Qualifications.

2.16 REQUEST FOR QUALIFICATION (RFQ) OR PROPOSAL: means a solicitation of responses for goods and/or services for which the scope of work, specifications or contractual terms and conditions cannot reasonably be closely defined. Evaluation of a proposal is based on prior established criteria which may include but may not be totally limited to price.

It includes all exhibits and attachments as approved by the District, and addenda or change orders issued by the Purchasing Department. In addition, these terms are used interchangeably in this Request for Qualifications while retaining the same meaning.

2.17 RESPONSIBLE BIDDER, OFFERER, QUOTER, OR RESPONDENT An individual or business which has submitted a bid, offer, proposal, qualifications, quotation, or response, and which has the capability in all respects to perform fully the contract requirements, and the integrity and reliability which shall give reasonable assurance of good faith and performance.

2.18 RESPONSIVE BIDDER, OFFERER, QUOTER, OR RESPONDENT, VENDOR, CONTRACTOR means an individual or business that has submitted a bid, offer, proposal, quotation or response, that conforms in all material respects to the solicitation

2.19 SUBCONTRACTOR/SUB-CONSULTANT: Any person, firm, entity, or organization, other than the employees of the successful Proposer, who contract with the successful proposer to furnish labor, or labor and materials, in connection with the Work or Services to the District, whether directly or indirectly, on behalf of the successful proposer.

2.20 WORK, SERVICES, PROGRAM, PROJECT, OR ENGAGEMENT: All matters that shall be required to be done by the successful Proposer in accordance with the Scope of Services, and the Terms and Conditions of this RFQ.

SECTION III

GENERAL CONDITIONS

3.1 REQUIREMENTS FOR PERSONNEL ENTERING DISTRICT PROPERTY

Possession of firearms will not be tolerated in or near school buildings. Nor will violations of Federal or State Laws and any applicable District policy regarding Drug Free Workplace be tolerated. Violators shall be subject to immediate termination. "Firearm" means any weapon (including a starter gun or antique firearm) which will, is designed to, or may readily be converted to expel a projectile by the action of an explosive; the frame or receiver of any such weapon; any destructive device; or any machine gun.

No person who has a firearm in their vehicle may park their vehicle on District property. Furthermore, no person may possess or bring a firearm on District property.

If any employee of an awarded Proposer or subcontractor is found to have a firearm on District property, said employee shall be terminated from the project. If the awarded Proposer or subcontractor fails to ensure that said employee is restricted from the project may result in contract cancellation and/or termination.

Proposers are advised that they are responsible to ensure that no employee, agent or representative of their company who has been convicted or who is currently under investigation for a crime against children in accordance with section 435.04, Florida Statutes shall enter any school site.

The awarded proposer is required to have all personnel working with this project must have & wear MCSD Vender badge, all personnel must apply at the MCSD and pay for all associated costs for obtaining the MCSD Vender badge.

3.2 FINGERPRINTING, JESSICA LUNSFORD ACT

Contractor, his subcontractors, vendors and suppliers who are to be permitted access to school grounds while students are present, or have direct contact with students or have access to or control of school funds shall obtain Level 2 background screening in accord with Florida Statute FS1012.465 – Jessica Lunsford Act.

3.2.1 Level 2 screening excludes personnel working on school district property where students are present who have criminal records that include sexual offender, sexual misconduct with developmentally disabled or mental health patients, terrorism, murder, kidnapping, lewd, lascivious or indecent acts or exposure, incest, child abuse or neglect.

3.2.2 Persons screened as noted above with other types of criminal history may be allowed on school grounds provided under following conditions:

3.2.3 Contractor/CM, subcontractors, vendors and suppliers shall be under continuous direct supervision of school district employee or Level 2 screened and cleared employee as noted above.

3.2.4 Contractor/CM, subcontractors, vendors and suppliers may be allowed on student occupied site if area of construction is isolated from students by continuous six foot high chain link fence separating work area and school.

3.2.5 Persons with current Level 2 clearance who are subsequently arrested for disqualifying offenses shall be disqualified from access to school sites and shall immediately surrender their Photo ID Badge to their employer who shall be responsible for returning badge to Martin County School District's Department of Human Resources within 48 hours of arrest or notice of arrest or criminal offense.

3.2.6 Persons failing to notify their employer and Martin County School District's Department of Human Resources within 48 hours of arrest will be charged with 3rd degree felony, punishable by up to five years imprisonment and $1,000 fine.

3.2.7 Employers of persons having been arrested for disqualifying offenses who subsequently allows said employee to continue working on school property may also be charged with 3rd degree felony, punishable by up to five years imprisonment and $1,000 fine**.**

3.2.8 Contractor/CM, his subcontractors, vendors and suppliers working on school board sites shall be fingerprinted and obtain work badges**.**

3.2.9 Questions regarding fingerprinting or identification badge processing may be directed to District Personnel Department at (772)219-1200, Ext. 296.

3.2.10 The fingerprint screening must be completed in advance of the awarded Proposer providing any services. The awarded Proposer shall bear the cost of acquiring the background screening required by Fla. Stat. 1012.32, and any fee imposed by the Florida Department of Law Enforcement to maintain the fingerprints provided with respect to the awarded Proposer and its employees. Awarded Proposer shall provide District with a list of its employees. Awarded Proposer shall update these lists in the event that any new employees are added and awarded Proposer agrees that new employees shall be fingerprinted. Awarded Proposer agrees that in the event any employee is convicted of a criminal offense, the awarded Proposer shall notify the District within forty-eight (48) hours.

3.2.11 The parties agree in the event that the awarded Proposer fails to perform any of the duties described in the above paragraph, this shall constitute a breach of the contract entitling the District to terminate immediately with no further responsibility to make payment or perform any other duties under this contract. Awarded Proposer agrees to indemnify and hold harmless the District, its officers and employees from any liability whatsoever resulting from awarded Proposer's failure to comply with the requirements of this paragraph or Fla. Stat. 1012.32 and 1012.465.

3.3 QUALIFICATIONS

Proposals shall be considered from qualified firms or individuals whose experience and expertise includes successful work in similar projects. Also, the firm must have a sufficient number of qualified staff in the applicable disciplines to complete the work in the time required and in accordance with State of Florida statutes and standards, if applicable. The District may conduct such investigations as it deems necessary to establish the responsibility, qualifications and financial ability of the Proposers, proposed subcontractors and other persons and organizations to do the work in accordance with the Contract Documents to the District's satisfaction within the prescribed time. The District reserves the right to reject the Proposal of any Proposer who does not pass any such evaluation to the District's satisfaction.

3.4 EXPENSES

Costs, either direct or indirect, incurred by the Proposer in the preparation, presentation, demonstration, delivery or for any other reason associated with the submittal of this Proposal are solely the responsibility of the Proposer and not the District, and are not to be charged to the District. However, neither the DISTRICT nor its representatives shall be liable for any expenses incurred in connection with preparation of a response to this RFQ. All expenses in the preparation of this RFQ are the sole responsibility of the Proposer. All Submittals should be prepared to provide a straightforward and concise description of the respondents' qualifications and ability to meet the requirements of the RFQ.

3.5 BACKGROUND INVESTIGATION

As a part of the RFQ evaluation process, the District may conduct a background investigation including a criminal record check of Proposer's officers and/or employees, by the Sheriff's Office. The Proposer's submission of a RFQ constitutes acknowledgement of and consent to such investigation. The District shall be the sole judge in determining the Proposer's qualifications.

3.6 FACILITIES

The District reserves the right to inspect the Proposer's facilities at any reasonable time, prior to award of the Proposal, during normal working hours, with prior notice to determine that it has a bona fide place of business, and is a responsible Proposer.

3.7 INQUIRIES/AVAILABILITY

Inquiries concerning Proposal Submittals should be made in writing. The District will respond to written inquiries, if received at least 10 calendar days prior to the date scheduled for opening the proposals. The

District shall record its responses to inquiries and any supplemental instructions in the form of a written addendum. **Written addenda shall be disseminated via www.demandStar.com** and the Purchasing Website: https://www.martinschools.org/Page/945 via Vendor Registry**.** No interpretation shall be considered binding unless provided in writing to the Martin County School District Purchasing Department, bids@martin.k12.fl.us. **It is the sole responsibility of the Proposer to ensure all addenda are received.**

CONTACT WITH MARTIN COUNTY SCHOOL DISTRICT PERSONNEL ANY MEMBER OF THE SELECTION COMMITTEE OR BOARD MEMBER OTHER THAN PURCHASING STAFF REGARDING THIS REQUEST FOR QUALIFICATION SHALL BE GROUNDS FOR ELIMINATION FROM THE SELECTION PROCESS.

3.8 INTERPRETATIONS AND ADDENDA

All Proposers shall carefully examine the Proposal Documents. Any ambiguities or inconsistencies should be brought to the attention of the Purchasing Department through written communication prior to opening of the proposals. Failure to do so on the part of the Proposer shall constitute an acceptance by the Proposer of any subsequent decision by the District. The District will receive written requests for clarification concerning the meaning or interpretation of this RFQ by issuance of addenda via www.demandstar.com and the Purchasing Website: https://www.martinschools.org/Page/945 via Vendor Registry, not less than 10 days prior to the submittal date. Questions shall be emailed to bids@martin.k12.fl.us with reference to the RFQ number in the subject for faster recognition. Only questions answered by formal written Addenda issued by the Purchasing Department shall be binding. Oral and other interpretations or clarifications shall be without legal effect.

The DISTRICT shall endeavor (through www.demandstar.com) and on the Purchasing department website: https://www.martinschools.org/Page/945 via Vendor Registry notification of any addenda issued. PROPOSERS OBTAINING RFQ DOCUMENTS FROM THE PURCHASING DEPARTMENT WEBSITE MUST VISIT THE WEBSITE AND DOWNLOAD ADDENDA THEMSELVES. However, it is the sole responsibility of the Proposer to ascertain whether any addenda to this Request for Qualification and Proposal Documents have been issued, and to submit any and all such addenda properly acknowledged with the Proposal response.

District may delay scheduled due dates if it is to the advantage of the District. The District shall notify proposers of all changes in scheduled due dates by written addenda.

3.9 EVALUATION

The District shall assemble a Professional Service Advisory Committee (PSAC) comprised of staff and additional consultants, if necessary. This committee shall evaluate the proposals and may recommend the top ranked firms for oral presentations or discussions. The committee shall evaluate the proposals based on the demonstrated proficiency level of the proposing firm for work of a similar type as specified in the Statement of Services and performance-based criteria for the public construction project, including the legal description of the site, survey information concerning the site, interior space requirements, material quality standards, schematic layouts and conceptual design criteria of the project, willingness to meet time and budget requirements, design and construction schedules, site development requirements, provisions for utilities, stormwater retention and disposal, the ability of professional personnel, performance measures, recent/current projected workloads of the firms; and the volume of work previously awarded to each firm, and parking requirements applicable to the project, and other requirements as required by the District. Additionally, evaluation points shall be assigned to information contained in the package to aid in reducing the total number of submittals to at least three (3) short-listed firms. Short-listed firms shall be invited to make presentations and / or to be interviewed for final evaluation.

3.10 AWARD OF CONTRACT

The District reserves the right to reject any and all Proposals, waive any and all informalities, minor irregularities, and to make a multiple award if it is in the best interest of the District. District contracts are awarded only when a fully executed written agreement has been returned to the Proposer by the District.

No one shall be entitled to rely on any other action as an award. The District shall not be liable for any costs incurred by the Proposer prior to execution of the contract by the parties.

3.11 REJECTION CRITERIA/ DISQUALIFICATION OF PROPOSER

More than one Proposal from an individual, firm, partnership, corporation, or association under the same or different names shall not be considered. The District reserves the right to reject the proposal of any Proposer in arrears or in default upon any debt or contract to the District or who have failed to perform faithfully any previous contract with the District or with other governmental jurisdictions. All Proposals shall be rejected if there is reason to believe that collusion exists between Proposers. Your proposal shall be rejected as non-responsive if any of the following criteria exist (this list is not inclusive):

- The RFQ response Package is found to have concealed or contained false and/or misleading information.
- Minimum requirements are not met as specified in Section IV.
- Executed requested Attachments/Affidavits or Tab sections are not submitted with the response.
- Substitution of (SF) 330, 254 or 255 for Specific Related Experience of the Firm selection and Management Team Tabs shall result in your proposal being rejected as non-responsive.
- Not including an executed authorized signature page.
- Not licensed to perform the required work or provide the required product.
- Not eligible to Propose due to violations listed under Item# 3.17, Public Entity Crimes.
- The Proposal shows non-compliance with applicable laws or contains any unauthorized additions or deletions, is a conditional Proposal, is an incomplete Proposal, or contains irregularities of any kind which make the Proposal incomplete, indefinite, or ambiguous as to its meaning.

3.12 WAIVERS

The Board, at its sole discretion, reserves the right to reject any and all proposals, accept any proposal or any combination of proposals or waive any minor irregularity or technicality in proposals received and may, at its sole discretion, request a re-proposal, when in its sole judgment, it shall best serve public interest.

3.13 EXECUTION OF PROPOSAL

Proposal must contain a manual signature, in ink, of an authorized representative, who has the legal ability to bind the firm in contractual obligations. Proposal must be typed or legibly printed in ink. Use of erasable ink is not permitted. All corrections made by Proposer to any part of the Proposal document must be initialed in ink. The signature as reflected on the Transmittal Letter shall certify the veracity of the contents of the submittal and bind the firm to this response to the District's Request for Qualification.

- Attachment A, Proposer's Profile Statement must be completed and included in proposal.
- Proposals by corporations must be executed in the corporate name by the President or Vice President (or other corporate officer accompanied by evidence of authority to sign) and the corporate seal shall be affixed and attested by the Secretary or Assistant Secretary. The corporate address and State of Incorporation shall be shown below the signature.
- Proposals by partnership must be executed in the partnership name and signed by a general partner, his title must appear under his signature and the official address of the partnership must be shown below the signature.
- Include a list of authorized personnel to sign on behalf of the company on company letterhead and signed by an authorized agent as designated on the Division of Corporations for the State of Florida (Include in Tab 9 of Section VI).

3.14 WITHDRAWAL OF PROPOSALS

Proposers may not withdraw their submittal for a period of ninety (90) calendar days after the day set for the opening of RFQs. Otherwise all Proposals shall be irrevocable unless the Proposal is withdrawn only by written communication delivered to the Purchasing Department prior to the solicitation closing date and time. The Proposer must present certification to assure that they are indeed an authorized representative of the Proposer's firm at the time such communication to withdraw the Proposal is presented.

3.15 CONFLICT OF INTEREST

The Contractor represents and warrants to the District that no officer, employee, or agent of the District has any interest, either directly or indirectly, in the business of the Contractor to be conducted hereunder. The Contractor further represents and warrants to the District that it has not employed or retained any company or person, other than a bona fide employee working solely for the Contractor, to solicit or secure this contract, and that it has not paid, or agreed to pay any person, company, corporation, individual, or firm, other than bona fide Personnel working solely for the Contractor any fee, commission, percentage, gift or other consideration, contingent upon, or resulting from the award or making of this contract. The Contractor also acknowledges that it has not agreed as an expressed or implied condition for obtaining this contract, to employ or retain the services of any person, company, individual or firm in connection with carrying out this contract (include in Tab 8 of Section VI).

It is understood and agreed by the Contractor that, upon the breach or violation of this Section, the District shall have the right to terminate the contract without liability and at its sole discretion, and to deduct from the contract price, or to otherwise recover, the full amount of such fee, commission, percentage, gift or consideration paid by the Contractor.

- The Contractor represents that it presently has no interest, either direct or indirect, while performing the services required by this contract, which would conflict in any manner with Florida Statutes. The Contractor represents that no person having any such interest shall be employed during the term of this contract, including any officer, employee or agent of the District.
- The Consultant represents and warrants that it has no current contracts with any entity that would create any conflict of interest in the Consultant's ability to perform the services required by this contract. Further, the Consultant represents and warrants that throughout the term of this contract, it will not undertake any work that would create such a conflict in interest.
- The Consultant shall promptly notify the District in writing by certified mail or electronic mail of all potential conflicts of interest for any prospective business association, interest or other circumstance that may influence or appear to influence the Contractor's judgment or quality of services being provided hereunder. Such written notification shall identify the prospective business association, interest or circumstance, the nature of work that the Contractor may undertake and request an opinion of the District as to whether the association, interest or circumstance would, in the opinion of the District, constitute a conflict of interest if entered into by the Contractor. If, in the opinion of the District, the prospective business association, interest or circumstance would not constitute a conflict of interest by the Contractor, the District shall so state in the notification and the Contractor shall, at its option, enter into such association, interest or circumstance and it shall be deemed not in conflict of interest with respect to services provided to the District by the Contractor under the terms of this Contract.

3.16 NON-COLLUSION

By submitting a Proposal the Proposer certifies that it has not divulged discussed or compared its Proposal with other Proposers and has not colluded with any other Proposer or parties to a Proposal whatsoever (include in Tab 8 of Section VI).

Any such violation shall result in the cancellation and/or return of materials (as applicable) as being non-conforming and removal from the District's Proposal list(s).

3.17 PUBLIC ENTITY CRIMES

- The Proposer certifies by submission of this Proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from participation in this transaction by the State of Florida or Federal Government. Further, Proposer certifies that it has divulged, in its Proposal response information regarding any of these actions or proposed actions with other governmental agencies. (See Attachment B).
- Pursuant to F.S. 287.133, as amended: a person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a Proposal on a Contract to provide any goods or services to a public entity, may not submit a Proposal on a Contract with a public entity for the construction or repair of a public building or public work, may not submit Proposals on leases of real property to a public entity, may not be awarded or perform work as a Vendor, supplier, sub-vendor, or consultant under a Contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in F.S. 287.017 for CATEGORY TWO or higher for a period of 36 months from the date of being placed on the convicted vendor list.
- The awarded Proposer or any subcontractor shall not employ any persons with multiple felonies and / or crimes against children. The awarded Proposer must provide documented proof of efforts to comply with this requirement. The Owner may declare any noncompliance or lack of diligent effort by the awarded Proposer to comply as a breach of contract and immediately terminate the services of the awarded Proposer.
- Any employees involved in any Chapter 435, Florida Statutes offenses are precluded from continuing to work on a project and must be replaced. Failure to comply may result in the immediate termination of the awarded Proposer's contract at the sole discretion of the District. Lack of knowledge by the Proposer shall in no way be a cause for relief from responsibility.

3.18 PROPOSAL AS PUBLIC DOMAIN

All documents and other materials made or received in conjunction with this project will be subject to public disclosure requirements of chapter 119, Florida Statutes. This includes material that the responding Proposer might consider to be confidential or a trade secret. The proposal will become part of the public domain upon opening. **Respondents shall not submit pages marked "proprietary" or otherwise "restricted".**

3.19 PUBLIC RECORDS

Pursuant to Florida Statute Section 119.071 (3)(b) F.S., sealed Proposals or proposals received by an agency pursuant to competitive solicitations are exempt from the provisions of 119.07(1) and s. 24(a), Art. I of the State Constitution until such time as the agency provides notice of a decision or intended decision pursuant to §120.57(3)(a), F.S. or within 10 days after Proposal/proposal opening, whichever is earlier.

If the contractor has questions regarding the application of chapter 119, Florida statutes, to the contractor's duty to provide public records relating to this contract, contact the custodian of public records, staff attorney's office at 772. 219.1200, extension 30241, Instructional Center Bldg. 30, 500 E. Ocean Blvd, Stuart, Florida 34994, email publicrecords@martin.k12.fl.us.

3.20 MINORITY BUSINESS PARTICIPATION

The District strongly encourages the participation of Minority/Woman owned business enterprises; and shall endeavor to meet the minority business enterprise procurement goal set forth in FS 287.042.

3.21 LOBBYING

Proposers are hereby advised that they are not to lobby with any District personnel or board members related to or involved with this Proposal until the administration's recommendation for award. All oral or written inquiries must be directed through the Purchasing Department. Any Proposer or any individuals that lobby on behalf of Proposer during the time specified shall result in rejection / disqualification of said Proposal.

3.22 CONE OF SILENCE

A cone of silence is hereby established for all competitive selection processes for the provision of goods and services. The cone of silence is designed to protect the integrity of the procurement process by shielding it from undue influences prior to the recommendation of contract award. This cone of silence shall be imposed on these procurements after advertisement of same.

- The cone of silence prohibits any communication regarding a competitive solicitation process. The cone of silence commences after the advertisement of the competitive solicitations Competitive procurements are advertised on the purchasing department's web page or in a newspaper of general circulation.
- The cone of silence terminates at the time the School Board acts on a written recommendation from the purchasing department or planning and construction department regarding contract award; provided, however, that communications are permitted when the School Board receives public comment at the meeting when the recommendation is presented.
- Section 119.071(1)(b)2., F.S., provides an exemption for “sealed bids, proposals, or replies received by an agency pursuant to a competitive solicitation” until such time as the agency provides notice of an intended decision or until 30 days after opening “the bids, proposals, or final replies,” whichever is earlier.
- The purchasing department and planning and construction department shall ensure that all solicitations include provisions describing the requirements and prohibitions of the cone of silence, including how a potential vendor, service provider, Proposer, lobbyist, or consultant may communicate with District personnel.
- Any person, whether employed by the District or not, who knowingly violates a provision of this policy shall be prohibited from serving on a District competitive selection committee.
- Violation of this policy by a particular Proposer, respondent, and/or representative may, at the discretion of the District, result in rejection of said Proposer, respondent, and/or representative's RFQ, proposal, or offer and may render any contract award to said Proposer, or respondent voidable.
- In addition to any other penalty provided by law, violation of this policy by a District employee shall subject said employee to disciplinary action up to and including dismissal from service.

3.23 ASSIGNMENT

The successful Proposer shall not sub-contract, assign, transfer, convey, sublet, or otherwise dispose of the contract, or of any or all of its rights, title, or interest therein, or its power to execute such contract to any person, firm, or corporation without prior written consent of the District. Furthermore, the awarded Proposer shall not transfer or assign the performance required by this RFQ.

3.24 SUBCONTRACTING/SUBCONSULTANT

If an awarded Proposer intends to subcontract any portion of the Contract for any reason, the name and address of the subcontracting firm must be submitted along with the Proposer’s Proposal or prior to use for approval, include in Tab 1 of Section VI. No subcontracting shall take place prior to Proposal-awarded Proposer furnishing this information and receiving written approval from the District. The Purchasing Department reserves the right to reject a subcontractor who previously failed in the proper performance of a contract or failed to deliver on-time contracts of a similar nature, or who, the District has determined in its sole discretion, is not in the position to perform the contract due to the subcontractor’s size,

experience, or resources. The District reserves the right to inspect all facilities of any subcontractor in order to make determination as to the foregoing. The subcontractor shall be equally responsible for meeting all requirements specified in the Request for Qualification.

Nothing contained in this RFQ will be construed as establishing any contractual relationship between any sub-proposer(s) and the District. The awarded Proposer (s) shall be fully responsible to the District for the acts and omissions of the subcontractor (s) and their employees. After award of contract, any change in subcontractors requires prior written approval by the School District.

3.25 DISPUTES

In case of any doubt or difference of opinion as to the services to be furnished hereunder, the decision of the District shall be final and binding on both parties.

3.26 PROPOSAL PROTEST

Failure to file a protest within the time prescribed in Section 120.57(3), Florida Statutes, shall constitute a waiver of proceedings under Chapter 120, Florida Statutes.

- Any person who is adversely affected by the agency decision or intended decision shall file with the agency a notice of protest in writing within 72 hours after the posting of the notice of decision or intended decision.
- With respect to a protest of the terms, conditions, and specifications contained in a solicitation, including any provisions governing the methods for ranking proposals, or replies, awarding contracts, reserving rights of further negotiation, or modifying or amending any contract, the notice of protest shall be filed in writing within 72 hours after the advertisement of the solicitation.
- The formal written protest shall be filed within 10 days after the date the notice of protest is filed. Failure to file a notice of protest or failure to file a formal written protest shall constitute a waiver of proceedings under this chapter. The formal written protest shall state with particularity the facts and law upon which the protest is based. Saturdays, Sundays, and state holidays shall be excluded in the computation of the 72-hour time periods provided by this paragraph.
- In order for the District to consider the protest, the protesting party shall deliver with the formal written protest to the District a “protest bond”. Request bond requirements to bids@martin.k12.fl.us.

3.27 DEBARMENT

The Board shall have the authority to debar a person / corporation for cause for consideration or award of future contracts. The debarment shall be for a period commensurate with the seriousness of the causes, generally not to exceed three (3) years. When the offense is willful or blatant, a longer term of debarment may be imposed, up to an indefinite period.

3.28 DELETION/OVERSIGHT/MISSTATEMENT

Any deletion, oversight or misstatement of the Specifications shall not release the Proposer from the responsibility of completing the project within the agreed upon time frame.

3.29 NON-DISCRIMINATION & EQUAL OPPORTUNITY EMPLOYMENT

The Proposer certifies that they are in compliance with the non-discrimination clause contained in Section 202, Executive Order 11246, as amended by Executive Order 11375 relative to equal employment opportunity for all persons without regard to race, color, religion, sex or national origin. The provisions of the ADA Act of 1990 pertaining to employment shall also be applicable (include in Tab 8 of Section VI).

Proposer understands and agrees that violation of this clause is a material breach of the contract and may result in contract termination, debarment, or other sanctions.

3.30 TAXES

The District is exempt from all Federal, State, and Local taxes. An exemption certificate will be provided.

3.31 RECORDS/AUDITS

The awarded Proposer shall maintain during the term of the contract all books, reports and records in accordance with generally accepted accounting practices and standards for records directly related to this contract. The form of all records and reports shall be subject to the approval of the District's Auditor. The awarded Proposer agrees to make available to the District's Auditor, during normal business hours all books of account, reports and records relating to this contract for the duration of the contract and retain them for a minimum period of one (1) year beyond the last day of the contract term.

3.32 LIABILITY, INSURANCE, LICENSES, AND PERMITS

Where awarded Proposers are required to enter or go onto District property to deliver materials or perform work or services as a result of RFQ award, the Proposer will assume the full duty obligation and expense of obtaining all necessary licenses, permits and insurance. The awarded Proposer shall be liable for any damage or loss to the District incurred by the awarded Proposer, the awarded Proposer's employees, licensees of the awarded Proposer or agent or any person the awarded Proposer has designated in the performance of his or her contract as a result of the RFQ; further, the awarded Proposer shall be liable for all activities of the awarded Proposer occasioned by performance of the Contract.

3.33 SEVERABILITY

Indulgence by the District on any non-compliance by the Proposer does not constitute a waiver of any rights under this Request for Qualifications. If any term or provision of this RFQ or resulting Contract, or the application thereof to any person or circumstances shall, to any extent, be held invalid or unenforceable, the remainder of this RFQ or Contract, or the application of such terms or provisions to persons or circumstances other than those as to which it is held invalid or unenforceable, shall not be affected, and every other term provision of this RFQ/Contract shall be deemed valid and enforceable to the extent permitted by law.

3.34 VENUE

All contracts shall be governed by the laws of the State of Florida and venue shall be in Martin County, Florida. The venue of any legal action resulting from this Proposal shall be Martin County, Florida.

3.35 UNAUTHORIZED WORKERS

The District shall not intentionally award publicly-funded contracts to any contractor who knowingly employs unauthorized alien workers, constituting a violation of the employment provisions contained in 8 U.S.C. Section 1324a(e) [Section 274A(e) of the Immigration and Nationality Act ("INA")]. The District shall consider the employment by any contractor of unauthorized aliens a violation of Section 274A(e) of the INA. Such violation by the Recipient of the employment provisions contained in Section 274A(e) of the INA shall be grounds for unilateral cancellation of this Agreement by the District.

3.36 SCRUTINIZED COMPANIES LIST

Pursuant to Sections 287.135, 215.4725, and 215.473, of the Florida Statutes which prohibits agencies from contracting with any company, principals, or owners on the Scrutinized Companies with Activities in Sudan List, participation in the Boycott of Israel, the Scrutinized Companies with Activities in the Iran Petroleum Energy List, and is not engaged in business operations in Cuba or Syria are prohibited from contracting for goods or services in any amount at the time of submitting to this RFQ through the term of this contract, including renewals or extensions. If firm is found negligent, contract shall be terminated; and submission of a false certification may subject firm to civil penalties, attorney's fees, and/or costs; may not transact business with any public entity for a period of 36 months (include in Tab 8 of Section VI).

Questions regarding this statement should be directed to the State of Florida, Bureau of State Procurement (850) 488-8440.

3.37 SOVEREIGN IMMUNITY

Nothing contained herein is intended to serve as a waiver of sovereign immunity by any agency or political subdivision to which sovereign immunity may be applicable or as a waiver of limits to liability or rights existing under Section 768.28, Florida Statutes.

3.38 GOVERNMENTAL REGULATIONS AFFECTING LAND USE

Unless the Scope of Services of this Contract includes an investigation into the applicable land use, zoning and platting requirements for the Project, Consultant shall proceed on the assumption that the Project as presented by the District, is in accordance with all applicable governmental regulations.

3.39 COMPETITIVE NEGOTIATION

Consultant shall execute a truth-in-negotiation certificate stating that wage rates and other factual costs supporting the compensation are accurate, complete, and current. The original contract price and any additions thereto will be adjusted to exclude any significant sums by which the District determines the contract price was increased due to inaccurate, incomplete, or noncurrent wage rates and other factual costs. All such contract adjustments must be made within one (1) year following the end of the contract.

3.40 PROHIBITION AGAINST CONTINGENT FEES

Consultant warrants that he or she has not employed or retained any company or person, other than a bona fide employee working solely for the Engineer to solicit or secure this agreement and that he or she has not paid or agreed to pay any person, company, corporation, individual, or firm, other than a bona fide employee working solely for the Consultant any fee, commission, percentage, gift, or other consideration contingent upon or resulting from the award or making of this agreement (include in Tab 8 of Section VII). For the breach or violation of this provision, the District shall have the right to terminate the agreement without liability and, at its discretion to deduct form the contract price, or otherwise recover, the full amount of such fee, commission, percentage, gift, or consideration. Consultant or partnership thereof, who offers to pay, or pays any fee, commission, percentage, gift, or other consideration contingent upon, or resulting from, the award or making of any District contract for professional services shall, upon conviction in a state court of competent authority, be found guilty of a first degree misdemeanor, punishable as provided in F.S. 775.082 or F.S. 775.083.

Each contract entered into by the School Board for professional services shall be in accordance with F.S. 287.055(6).

3.41 REUSE OF EXISTING PLANS

Notwithstanding any other provisions of this policy, there shall be no public notice requirement or utilization of the selection process as provided in this policy for projects in which the School Board is able to reuse existing plans from a prior project. However, public notice for any plans which are intended to be reused at some future time shall contain a statement which provides that the plans are subject to reuse in accordance with the provisions of F.S. 287.055(10).

SECTION IV

SCOPE OF SERVICES

The School Board of Martin County, Florida, in compliance with Florida Statute 287.055, Consultants' Competitive Negotiation Act (CCNA), is seeking qualified, experienced and licensed architectural and engineering firms, including their consultants to design and for the construction engineering and inspection services for replacement of Jensen Beach Elementary School located at 2525 NE Savannah Rd, Jensen Beach, FL 34957; and Palm City elementary school located at 1951 SW 34th St, Palm City, FL 34990. The Jensen Beach and Palm City Elementary Replacement School projects will consist of two story buildings and approximately 123,770 gross square feet with 750 student stations for each school.

The construction of Jensen Beach and Palm City Elementary Replacement School projects will be delivered to the Owner through a Construction Management at Risk contract which will include the following: pre-construction design coordination services, schematic design budget, design development budget, construction documents GMP, construction bid document review, assembly of bid packages and subcontractor bidding, building and site construction, and turnover of the new school facility and campus. Direct communication and coordination of services between the engineer and contractor are essential to the success of this project.

4.1 MANDATORY PREPROPOSAL MEETING & SITE VISITS

A **Mandatory Pre-proposal Meeting** will be held on **August 16, 2019 at 10:00 AM**, at the Purchasing Warehouse Facility, Service Center Conference Room, 2845 SE Dixie Highway, Building# 7, Stuart, Florida 34997. All Interested Proposers are required to attend this Mandatory Pre-proposal Meeting in order for their submittal to be considered. Proposers must sign-in on the attendance log prior to 10:00am, sign in log shall act as proof of attendance. Meeting will start promptly at 10:05am. Proposers that arrive after 10:05am will be considered late and shall not be permitted to sign the attendance log. A **site visit** at each location will follow the mandatory pre-proposal meeting. Failure to attend the mandatory site visit may be cause for disqualification of Proposer's submittal.

4.2 LIST OF ENGINEERING DISCIPLINES

Design Services shall include the following list of disciplines:

- Civil Engineering
- Mechanical Engineering
- Electrical Engineering
- Plumbing Engineering
- Structural Engineering
- Architecture
- Landscape Architecture
- Low Voltage
- Fire Protection Engineering
- Traffic Engineering

4.3 ASSIGNED TASKS

The scope of services shall include the following tasks to complete the work:

- Information gathering/Data Collection
- Options Analysis and Design Review
- Attendance at project meetings
- Public presentations to the Board, Staff, and Public

- Review of existing water supply and stormwater processes
- Boundary and topographic survey review
- Geotechnical evaluation review
- Hydro-geologic
- Concept development
- Site plan development
- Value Engineering
- Phasing plans (Schematic Design, Design Development, Construction Documents with three part specifications manual)
- Preparation of construction documents (plans, notes, details, and technical specifications)
- Preparation of cost / budget estimates and schedules
- Pre and post master plan FISH drawings
- Security, data, phone, fire alarm, media retrieval systems and technology
- Regulatory permitting
- Pedestrian Improvements
- Irrigation System & Well
- Review of bid solicitation packages
- Attendance at pre-bid meetings and bid openings
- Landscape Beautification
- Construction Administration
- Preparation of documentation to include CAD files, PDF files and hard copies of all record files, project close-out
- The project will not be closed out until all of the items on the MCSD Close-out List are submitted by the awarded A&E firm and reviewed by the District.
- And other tasks as identified

4.4 PROPOSED PROJECT SCHEDULE

Calendar days from notice to proceed to information gathering phase: concept development and presentations, site plan development and presentations phase completion:	**60 Days**
Calendar days from notice to proceed to schematic design phase submittal:	**90 Days**
Calendar days from the schematic design submittal until the design development phase submittal:	**60 Days**
Calendar days from the schematic design submittal until the CMR schematic design budget submittal:	**30 Days**
Calendar days from the design development phase submittal until the construction document phase submittal:	**60 Days**
Calendar days from the design development phase submittal until the CMR design development phase budget submittal:	**30 Days**
Calendar days from the construction document phase submittal until the notice to proceed submittal:	**90 Days**

Calendar days from the construction document phase until CMR construction document GMP phase submittal:	**30 Days**
Calendar days from notice to proceed to substantial completion:	**365 Days**
Calendar days from substantial to completion of demolition phase and site work:	**120 Days**
Calendar days from completion of demolition phase & site work to full completion:	**90 Days**

Once each school Building reaches the SUBSTANTIAL COMPLETION PHASE, the demolition & site renovation phase can begin with the following: site demolition, existing building demolition, site renovation (new site drainage, parking areas, driveways, fencing & gates, sidewalks, walkway canopies, etc.).

Amenities for the new building will include new classrooms for kindergarten through fifth grade, music and art rooms, a state of the art media center, kitchen, cafeteria with multi-function/auditorium capabilities, administrative suite, and a detached covered play area for physical education. Site-work includes storm and retention systems, sanitary sewer service, parking lots with parent and bus drives, LED site & building lighting, parameter site 8’ high non-climbing fencing with electronic access/egress gates and landscaping.

Technological amenities encompass a security alarm system, a campus security camera system (30 cameras max.), an access control system at the single point of entry, an advanced data system, audio/ visual system in the classrooms, intercom communication system, and exterior prox readers at assigned exterior doors for maximum security. The heating, cooling and ventilation system will consist of mechanical water cooled chillers & ice storage with air handling units, a make-up air system to provide necessary fresh air, return air ducts, and HVAC controls to maximize efficiency by controlling time of operation.

Exterior architectural characteristics include brick veneer, a built-up 3-ply roof system, plaster soffits, aluminum storefront window system. Interior architectural characteristics include carpet tile for the administration spaces, ceramic tile at restrooms, and quarry tile for food preparation area, VCT floor finish for all remaining spaces.

Proposers are advised to make a thorough inspection of the site. After award, no extra charge or compensation will be allowed by the District as a result of differences between actual materials and labor, unless by reason of unforeseeable causes beyond his control and without fault or negligence, including, but not restricted to acts of God or neglect of any other contractor.

It is the proposer's responsibility to become fully informed as to the nature and extent of the work required and its relation to any other work in the area, including possible interference from other site activities. Proposers are advised to make a thorough inspection and to take note of any varying degrees of difficulty associated with the work site. Any requests for modifications may be presented in writing as possible amendments to the "Request for Qualification" in accordance with the General Conditions.

SECTION V

INSURANCE REQUIREMENTS

Professional hereby agrees to procure and maintain insurance, as may be required, for the term of this agreement, and provide proof of insurance as evidenced by a valid Certificate of Insurance. A Certificate of Insurance (COI), deemed acceptable to the Martin County School District, must be received by the Purchasing Department within ten (10) from award and prior to the start of any work. Professional shall be authorized by subsisting certificates of authority issued to the companies by the Department of Insurance of the State of Florida or be eligible surplus lines insurers under Florida Statute 626.918, and Must have a current rating of "A-" or better and a Financial Size Category of "VIII" or better according to the most recent rating in effect by the A.M. Best Company.

The Martin County School Board must be named as an additional insured on the Commercial General Liability, Business Auto Liability and the Builder's Risk/Installation Floater if required below. Certificates shall be filed with the School Board by the Contractor, prior to commencement of the Work. Professionals shall not charge a markup or fee of any type on any insurance policies required herein.

Certificates shall contain a provision that coverage afforded under the policies will not be cancelled without prior written notice to the Board. The Certificates of Insurance from the Commercial General Liability, Business Auto Liability and the Builder's Risk/Installation Floater, must have the Martin County School Board as an additional insured in connection with the work contracted to (Name of Professional). This insurance applies separately to the School Board except with respect to limits of liability and is primary to rather than contributory with any insurance or self-insurance carried by the School Board. Any deviation to the insurance contract terms, conditions or limits listed below need to be approved by the Risk and Benefits Department. If requested, a complete copy of the insurance policy must be provided to the contract administrator or their designee within seven (7) days from the date requested.

References to letter and number combinations (i.e. CG 2037) refer to Insurance Services Office (ISO) forms and represent specific coverage provisions that may not be deviated from without approval by the Risk and Benefits Management Department. Any request for deviation or waivers must be addressed in writing to the Purchasing Department at bids@martin.k12.fl.us.

Commercial General Liability – insurance coverage for death, bodily injury, personal injury, or property damage, and requires endorsements CG 20 10 and 20 37 contract language, waiver of subrogation. Coverage must be on an occurrence form with limits of least $1,000,000 each occurrence and $2,000,000 general aggregate. The Martin County School District must be added as an ADDITIONAL INSURED. Any requirements, conditions, or stipulations that limit or restrict a covered activity must be clearly indicated on the Certificate of Insurance or attached thereto. If coverage is afforded solely or in part, through membership, registration, or participation in a master association, organization, or group, the terms and conditions for continued eligibility must be maintained. A lapse in insurance or failure to maintain appropriate coverage may result in the termination of this agreement.

Professional Liability – insurance coverage for errors and omissions resulting from the services provided under this agreement. Coverage must be for limits of at least $1,000,000 each occurrence and $2,000,000 general aggregate with a deductible or self-insured retention not to exceed $25,000. *Professional liability insurance is only required if your business provides certain professional services including but not limited to architectural, design, engineering, electrical, and construction, as well as professional services including but not limited to consulting, counseling, therapy or teaching.*

Automobile Liability – insurance coverage for any auto, including hired and non-owned, used in the course and scope of work. Business automobile liability insurance coverage must be on an occurrence form with limits of at least $500,000. Commercial autos shall require waiver of subrogation and owns, hired and non-owned. combined single limit, or $100,000 per person and $300,000 per accident. *Insurance is required as noted herein For personal vehicles that are not owned by the business but are driven onto school property in order to conduct business, we require evidence of personal automobile insurance at least equal to the Florida legal minimum of $10,000 personal injury protection (PIP) and $10,000 property damage liability (PDL).*

Cyber Privacy or Network Liability/Cyber Liability – insurance coverage must be for limits of at least $1,000,000 each occurrence for work being performed in order to cover the potential losses by electronic theft or sabotage.

Workers' Compensation and Employers' Liability – insurance that complies with Florida statute, Chapter 440. Minimum coverage limits must be the greater of (1) the statutory requirement or (2) $500,000 each accident, $500,000 disease - each employee, $500,000 disease - policy limit, and requires waiver of subrogation. *Workers' Compensation insurance is only required if Florida statute mandates that your business have coverage.* Firms with four (4) or less employees that does not acquire workers' compensation insurance must submit their State certificate of election to be exempt.

INDEMNIFICATION

Professional recognizes the broad nature of this article and voluntarily agrees to indemnify the Martin County School Board to the fullest extent permitted by Florida law and shall protect, defend, indemnify and hold harmless the Board, its agents, officers, elected officials, volunteers and employees from and against all claims, expenses, actions, liabilities, losses (including economic losses) and costs arising out of or related to any actual or alleged bodily injury, sickness, disease or death, or injury to or destructions of tangible property.

Awarded Proposer agrees to protect, defend, indemnify, and hold harmless the District, its employees, representatives, and elected officials from any and all claims and liabilities including all attorney's fees and court costs, including appeals, for which the District, its employees, representatives, and elected officials can or may be held liable as a result of injury (including death) to persons or damage to property occurring by reason of any negligence, recklessness, or intentional wrongful misconduct of the Awarded Proposer, its employees, or agents, arising out of or connected with this Agreement. The Awarded Proposer shall not be required to indemnify the District or its agents, employees, representatives, or elected officials when an occurrence results solely from the wrongful acts or omissions of the District, or its agents, employees or representatives.

The Awarded Proposer, without exemption, shall indemnify and hold harmless, the District, its employees, representatives and elected officials from liability of any nature or kind, including cost and expenses for or on account of any copyrighted, service marked, trademarked patented or unpatented invention, process, or any other intellectual property right or item manufactured by the Awarded Proposer. Further, if such a claim is made, or is pending, the Awarded Proposer may, at its option and expense, procure for the District the right to use, replace, or modify the item to render it non-infringing. If none of the alternatives are reasonably available, the District agrees to return the article on request to the Awarded Proposer and receive reimbursement from the awarded Proposer. If the Awarded Proposer used any design, device or materials covered by letters, patent or copyright, it is mutually agreed and understood, without exception, that the prices shall include all royalties or cost arising from the use of such design, device or materials in any way involved in the work. This article will survive the termination of any contract with the School District.

- The parties agree that Ten Dollars ($10.00) of the total compensation paid to the Proposer for performance of this Agreement shall represent the specific consideration for the Proposer's indemnification of the Owner.
- The District reserves the right to select its own legal counsel to conduct any defense in any such proceeding and all costs and fees associated therewith shall be the responsibility of Awarded Proposer under the indemnification agreement.
- It is the specific intent of the parties hereto that the foregoing indemnification complies with F.S. 725.06 (Chapter 725). It is further the specific intent and agreement of the parties that all of the Contract Documents on this Project are hereby amended to include the foregoing indemnification and the "Specific Consideration" therefore.

SECTION VI

INSTRUCTIONS FOR PREPARING SUBMISSIONS

This RFQ shall be awarded only to a responsive and responsible proposer, qualified to provide the work specified. The proposer should submit the following information with their design criteria response package to be considered responsive in order for the District to fully evaluate the firm's qualifications. Failure to fully submit the requested design criteria package shall result in the response being considered non-responsive.

6.1 RULES FOR SUBMISSIONS

The submission must name all persons or entities interested in the submission as principals. The proposal must declare that it is made without collusion with any other person or entity submitting a proposal pursuant to the RFQ. The interested firm or individual must submit One (1) one sided original, One (1) flashdrive-electronic copy (PDF format preferred), and seven (7) copies) on 8½" by 11" paper, in an opaque, sealed envelope of the requested qualification data for evaluation.

It is the responsibility of the Proposer to ensure that the Proposal Package is complete and received at the proper time. Proposals, once opened, become the property of the District and shall not be returned to the Proposers. Upon opening, proposals become "public records" and shall be subject to public disclosure in accordance with Chapter 119, Florida Statutes. Submittals shall remain subject to acceptance for ninety (90) calendar days after the day of the RFQ opening,

Please tab all support documents or attachments according to the order established in the following paragraph. The District reserves the right to deduct points or reject and not consider any proposal not organized and not containing all the information outlined.

6.2 PROPOSAL FORMAT

Proposers should prepare their proposals using the following format. Proposers shall label, tab and organize proposal submittal documents utilizing the following format as outlined below. All attachments as requested shall be inserted in the back of each corresponding section.

In preparing your proposal, proposer should assume that the District has no previous knowledge of their services or capabilities. Proposals should clearly describe the services, specifying where it meets, exceeds or does not comply with the general specifications.

6.3 LETTER OF TRANSMITTAL

The response format shall contain a letter of transmittal. The Letter of Transmittal will summarize in a brief and concise manner the Professional's understanding of the RFQ. An agent authorized to negotiate for the respondent must sign the letter of transmittal. This signature shall certify the veracity of the contents of the submittal and bind the firm to this response to the District's Request for Qualification. The transmittal letter shall not exceed two (2) pages in length.

Tab 1 ~ Company Qualifications

Firms shall provide a brief profile of their company, which should include their history, and corporate structure with organizational chart, ownership interest, and the length of company's existence. Professional must identify all of their offices, including the location of the main office that will be responsible for the actual production of the work. Include and complete Attachment A-Proposer's Profile Statement.

Firm must provide proof that their firm is fully licensed and holds a current certificate of registration under F.S. Chapter 481, to practice architecture or landscape architecture or a firm who holds a current certificate as a registered engineer under F.S. Chapter 471, to practice engineering and who is employed by or under contract to the School Board for professional architect services, landscape architect services, or engineering services in connection with the preparation of the design criteria package.

Provide a list of key personnel with experience and skills to perform the services (include information related to each service) in that office who will be responsible for the completion of the work, including the resumes of the primary (key) individuals. Resumes of proposed key personnel shall include (name,

company address, phone number, e-mail address) job skills, education, training, experience and professional affiliations/membership, copies of current licenses and certifications acquired for the type of work to be performed in the State of Florida, including a MBE/MWBE certified by the Office of Supplier Diversity, and as defined by the Florida Small and Minority Business Assistance Act of 1985.

Firm must provide a minimum of (10) year's comparable experience, specializing in the architectural and engineering design services of public schools.

All proposed sub-consultants shall be identified, and the working relationship between the respondent and the sub-consultant shall be explained. Sub-consultants shall also provide key personnel resumes. Standard forms 254 & 255 or OMB Standard Form 330 may be submitted.

Tab 2 ~ Task Approach

The design criteria package must specify performance-based criteria for the public construction project, including the legal description of the site, survey information concerning the site, interior space requirements, material quality standards, schematic layouts and conceptual design criteria of the project, willingness to meet time and budget requirements, design and construction schedules, site development requirements, provisions for utilities, stormwater retention and disposal, performance measures, and parking requirements applicable to the project to be used by the District to make this determination.

Firm shall provide a clear demonstration of the firm's ability to create superior site design, architecture and quality public spaces.

Provide an outline of proposed manner in which a scope of services will be addressed and the manner in which the approach shall demonstrate the firm's capability to work within the District's budget and time constraints. Describe all quality control (Design & Construction) implementation procedures, sub-consultant supervision, contract compliance and enforcement of industry standards.

Describe methods to maintain schedules and ways to recover. Describe development of planning level cost estimates and value engineering. Describe any project management systems used to track and control project issues.

Describe the communication procedures to be employed throughout the project and the plan to establish and maintain clear lines of communication with the District Project Manager and staff.

Describe implementation of security, data, phone, fire alarm, media retrieval systems and technology

Provide recommendations on the development and comparisons of design & CEI services, options analysis, and design review through project close-out.

Include samples of project management reports, inspection forms used by the field personnel, record keeping procedures, and project close out examples.

Tab 3 ~ Experience/Past Performance:

Firm shall provide a list minimum of five (5) projects of a similar type (of which 1 project is with a School District in Florida, and two projects are with any other Governmental entity) that the responsible office or individuals have completed within the last (15) years. Title and brief description of each project shall include:

- A brief description of the project.
- Total bid price, contract time limit, and final construction cost and time.
- Owner of the project.
- The name, email, and telephone number of a contact person.
- Project completion date.

Include references and contact information of Past Performance and working experience and relationships with the District or other Florida School Districts and public entities.

Tab 4 ~ Projected Workloads: Recent/current projected workloads of the firms; and the volume of work previously awarded to each firm.

Tab 5 ~ Familiarity: Provide a description of the firm's familiarity with local conditions, geography/topography, environmental conditions, and community goals in the Martin County area. The firm shall illustrate and give special attention to sustainable development that includes green development initiatives that enhance the ability of the District to meet its future needs.

Tab 6 ~ Financial Statements: Firm must provide a recent audited or certified financial statement, not more than two (2) years old, indicating the net worth of the applicant firm. The financial statement shall be evaluated on a pass-fail basis. Not submitting a certified or audited financial statement not more than two (2) years old or submitting only a compilation financial statement shall render a failed response for this criterion. In accordance with F.S. 119.07, any financial statement that an agency requires a prospective proposer to submit in order to prequalify for bidding or for responding to a proposal for a road or any other public works project is exempt from disclosure requirements. The Finance Director or designee shall review financial statements of shortlisted firms for veracity. If Finance Director does not approve the veracity of financials, firm may be disqualified.

- List of all bankruptcy petitions (voluntary or involuntary) which have been filed by or against the Proposer, its parent or subsidiaries or predecessor organizations during the past ten (10) years, if applicable. Include in the description the disposition of each such petition.
- List of all claims, arbitrations, administrative hearings and lawsuits brought by or against the Proposer or its predecessor organizations(s) during the last ten (10) years, if applicable. The list shall include all case names; case, arbitration or hearing identification numbers; the name of the project over which the dispute arose; and a description of the subject matter of the dispute.
- List of all criminal proceedings or hearings concerning business related offenses in which the Proposer, its principals or officers or predecessor organization(s) were defendants. Include all case and docket numbers, dates in question, case name.

Tab 7 ~ Insurance: Provide proof of ability to obtain insurance coverages as detailed in Section V. A certificate of insurance indicating that the firm has coverage in accordance with the requirements herein set forth may be furnished by the firm to the District along with their qualification data. A properly completed Accord Form is preferable. The awarded firm shall either cover any sub-consultants on its policy or require the sub-consultants to conform to all requirements for insurance contained herein.

Tab 8 ~ Disclosure Statements: Proposer, as specified below, must be replaced with Firm Name. Signature on the transmittal letter shall certify the veracity of these statements.

Include a disclosure statement advising the District of any potential **Conflict of Interest**, real or apparent, that the Respondent, employee, officer, or agent of the firm may have due to ownership, other clients, contracts or interests associated with this project as specified in Item 3.15.

Include the following Statement of **Non-Collusion**: "The respondent certifies, and in the case of a joint proposal, each party thereto certifies as to its own organization, that in connection with this solicitation the information provided has been arrived at independently, without consultation, communication, or agreement with any other respondent or with any competitor for the purpose of restricting competition, or in any other way influencing the competitive arena" as specified in Item 3.16.

Include the following statement of **Non-Discrimination & Equal Opportunity Employment:** Proposer certifies that they are in compliance with the non-discrimination clause contained in Section 202, Executive Order 11246, as amended by Executive Order 11375 relative to equal employment opportunity for all persons without regard to race, color, religion, sex or national origin. The provisions of the ADA Act of 1990 pertaining to employment shall also be applicable as specified in Item 3.29.

Include the following statement of **Scrutinized Companies List:** Proposer certifies and attests that firm is not on any list, engaged in any business operations, or participates in activities as specified in Item 3.36.

In accordance with Florida Statute 287.055(6)(a) **Prohibition Against Contingent Fees**, the following statement must be included in each submittal: "The respondent warrants that he or she has not employed or retained any company or person, other than a bona fide employee working solely for the respondent to solicit or secure this agreement and that he or she has not paid or agreed to pay any person, company, corporation, individual, or firm, other than a bona fide employee working solely for the respondent any fee, commission, percentage, gift, or other consideration contingent upon or resulting from award or making of this agreement" as specified in Item 3.40.

Tab 9 ~ Requested Information:

- Attachment A, Proposer's Profile Statement
- Attachment B, Public Entity Crimes
- Florida registration with the Division of Corporations
- Business Tax Receipt w/copy of IRS W-9 form or proof of exemption
- List of authorized personnel to sign on behalf of the company on company letterhead and signed by an authorized agent as designated on the Division of Corporations for the State of Florida.

Tab 10 ~ Optional Information: Provide any information pertinent to this project that will provide insight to the evaluators about the qualifications, fitness and abilities of the Respondent (please limit this information to two pages).

Tab 11 ~ Addenda (if applicable): All addenda issued pursuant to this solicitation must be acknowledged and submitted as part of the proposal package.

SECTION VII

EVALUATION OF SUBMISSIONS

7.1 EVALUATION COMMITTEE

The Superintendent of the District shall assemble a Professional Service Advisory Committee (PSAC) comprised of one (1) administrator from the Facilities Department, one (1) administrator from the Finance Department, one (1) administrator from the Operations Department, and two (2) other designees, and additional consultants, if necessary.

7.2 EVALUATION CRITERIA

The PSAC shall evaluate current statements of qualifications to perform the services required utilizing the following evaluation criteria:

EVALUATION CATEGORIES	100 POSSIBLE POINTS	
Firms Qualifications	30 pts	
Overall Knowledge & Qualifications		18 pts
Ability of Professional Personnel/Team		10 pts
Minority Business Enterprise Certifications		2 pts
Task Approach	25 pts	
Outline/approach of scope of services		10 pts
Willingness to meet time constraints (schedules) within District's budget,		6
Ability to create superior site design, architecture and quality public spaces.		5
Project Management System, security and communication implementation		4
Experience / Past Performance	15 pts	
Five (5) projects of a similar type as specified		10 pts
References/Past Performance		5 pts
Financials (Pass/Fail)	5 pts	
Projected Workloads	15 pts	
Recent/current workload		10 pts
Volume of awarded work		5 pts
Familiarity	10 pts	
Martin County / Local Conditions		7 pts
Sustainability/Green Initiatives		3 pts

7.3 EVALUATION METHOD

Step 1: The PSAC shall evaluate current statements of qualifications to perform the services required, rank the firms in order of preference as to their qualifications, shortlist no fewer than three (3) firms deemed to be the most highly qualified to perform the required services. The PSAC may also, at its sole discretion, request additional or clarifying information from any responder, and may require public presentations regarding their qualifications, approach to the project, and ability to furnish the required services.

Step 2: Shortlisted firms shall be invited to appear in front of the PSAC and/ or District Board for oral interviews and/or presentations on its qualifications and methodology. Notices for interviews will contain explicit instructions concerning location, date, time and length of interviews. The finalists are re-evaluated and ranked based on their presentations and preliminary design.

Proposer understands that if a team is short listed and selected to be interviewed and /or to make oral presentations to the PSAC and/or the Board, only the team members evaluated in the written submissions may present or be interviewed. The firm principal can accompany the team, and if

not a team member, introduce the team. Any changes to the team at the oral presentations/interviews shall result in that team's disqualification.

7.4 AWARD

One Design: If only one design for both elementary schools is selected, negotiations with the resulting A & E firm will begin.

Multiple Designs: If more than one design is selected, negotiations with each A & E firm for their design services for the school selected shall begin.

The District anticipates entering into a contract with the proposer who submits the proposal judged by the District to be most advantageous. The District reserves the right to award to more than one firm, if it's in the District's best interests to do so.

If an agreement to enter into negotiations cannot be reached with the top ranked respondent(s), the District may seek negotiations with the next ranked respondent, and so on, until an acceptable agreement has been reached.

Recommendation of Award of the Best and final offers (BAFO) shall be presented to the Board for approval.

7.5 PROFESSIONAL SERVICES AGREEMENT

A tentative contract shall be negotiated with the most qualified firm for professional services at compensation which the School Board's designee(s) determine(s) is fair, competitive, and reasonable. In making such determination, the School Board's designee(s) shall conduct a detailed analysis of the cost of the professional services required in addition to considering their scope and complexity. For any lump-sum or cost-plus-a-fixed-fee professional service contract that exceeds the maximum amount established by F.S. 287.017 for Category Four, the School Board shall require the firm receiving the award to execute a **Truth-In-Negotiation Certificate** stating that wage rates and other factual unit costs supporting the compensation are accurate, complete, and current at the time of contracting. Any professional service contract under which such a certificate is required shall contain a provision that the original contract price and any additions thereto shall be adjusted to exclude any significant sums by which the School Board determines the contract price was increased due to inaccurate, incomplete, or non-current wage rates and other factual unit costs. All such contract adjustments shall be made within one (1) year following the end of the contract. The contract shall also be in accordance with F.S. 287.055(6) with reference to prohibition against contingent fee clauses.

All work product, including but not limited to reports, plans, drawings, tracings, sketches, photographs, videos, illustrations, presentations, PowerPoint, specifications, models, maps, computer files, electronic data, and other documents (electronic or paper) prepared or created in the course of the performance of the services or obtained in the performance of the contract, as well as all data collected, together with summaries and charts derived therefrom, will be considered works made for hire and shall be the exclusive property of the District upon their creation without restriction or limitation on their use and will be made available, upon request, to the District at any time during the performance of the services.

Proposer will not copyright any material or work product developed under the contract. Any reuse of Proposer's prepared documents by the District, except for the specific purpose intended hereunder, will be at the District's sole risk and without liability or legal exposure to Proposer or its sub-proposers. The agreement shall be construed and interpreted, and the rights of the parties hereto determined, in accordance with Florida law without regard to conflicts of law provisions. The District and Proposer shall submit to the jurisdiction of Florida courts and federal courts located in Florida. The parties shall agree that proper venue for any suit concerning this Agreement shall be Martin County, Florida, or the Federal Southern District of Florida.

Proposer shall agree to waive all defenses to any suit filed in Florida based upon improper venue or *forum nonconveniens.* To encourage prompt and equitable resolution of any litigation, each party shall waive its rights to a trial by jury in any litigation related to the contract.

No award with respect hereto shall be deemed final and all such awards shall be deemed conditional, unless and until the parties shall have fully executed the agreement(s) contemplated herein, and a fully executed agreement has been returned to the proposer, or a purchase order has been issued by the district to the proposer. The District reserves the right to revoke any award made hereunder, without penalty, premium or obligation, at any time prior to the delivery of the fully executed agreement(s) or purchase order to the Proposer, notwithstanding that an award may have been published. No Proposer shall be entitled to rely on any announcement of an award, and the district shall in no way be estoped in the revocation of an award previously granted.

SECTION VIII
ATTACHMENTS

ATTACHMENT "A"
Return completed with Proposal
PROPOSER'S PROFILE STATEMENT

PROPOSER shall furnish the following information. Failure to comply with this requirement shall render the proposal non-responsive and shall cause its rejection. Additional sheets shall be attached as required.

PROPOSER'S Name and Principal Address: _____

Contact Person's Name and Title: _____

PROPOSER'S Telephone, _____ Fax Number: _____

PROPOSER'S Email address: _____

PROPOSER'S License Number: _____
(Please attach certificate of status, competency, and/or state registration.)

Certification: ☐MBE ☐SFDB ☐MWBE ☐DVBE ☐SBA ☐Other
(Please attach certificate)

PROPOSER'S Federal Identification Number: _____

Number of years your organization has been in business _____

State the number of years your firm has been in business under your present business name _____

State the number of years your firm has been in business in the work specific to this RFP:_____

Names and titles of all officers, partners or individuals doing business under trade name:

_____

_____

The business is a: ☐Sole Proprietorship ☐Partnership ☐Corporation

IF USING A FICTITIOUS NAME, SUBMIT EVIDENCE OF COMPLIANCE WITH FLORIDA FICTITIOUS NAME STATUTE. (ATTACH IN PROPOSER EXHIBIT SECTION)

Under what former name has your business operated? Include a description of the business. Failure to include such information shall be deemed to be intentional misrepresentation by the District and shall render the proposer RFP submittals non-responsive.

_____

At what address was that business located? _____

The PROPOSER acknowledges and understands that the information contained in response to this Qualification Statement shall be relied upon by DISTRICT in awarding the contract and such information is warranted by PROPOSER to be true. The discovery of any omission or misstatement that materially affects the PROPOSER'S qualifications to perform under the contract shall cause the DISTRICT to reject the Proposal, and if after the award, to cancel and terminate the award and/or contract.

_____
Print Name/Title

_____
Signature

ATTACHMENT "B"
Return completed with Proposal
SWORN STATEMENT ON PUBLIC ENTITY CRIMES

THIS FORM MUST BE SIGNED IN THE PRESENCE OF A NOTARY PUBLIC OR OTHER OFFICER AUTHORIZED TO ADMINISTER OATHS.

1. I understand that a "public entity crime" as defined in Paragraph 287.133(1)(g), Florida Statutes, means a violation of any state or federal law by a person with respect to and directly related to the transaction of business with any public entity or with any agency or political subdivision of any other state or with the United States, including, but not limited to, any contract for goods or services to be provided to any public entity or an agency or political subdivision of any other state or of the United States and involving antitrust, fraud, theft, bribery, collusion, racketeering, conspiracy, or material misrepresentation.

2. I understand that "convicted" or "conviction" as defined in Paragraph 287.133(1)(b), Florida Statutes, means a finding of guilt or a conviction of the public entity crime, with or without an adjudication of guilt, in any federal or state trial court of record relating to charges brought by indictment or information after July 1, 1989, as a result of a jury verdict, nonjury trial, or entry of a plea of guilty or nolo contendere.

3. I understand that an "affiliate" as defined in Paragraph 287.133(1)(a), Florida Statutes, means:

    a. A predecessor or successor of a person convicted of a public entity crime; or

    b. An entity under the control of any person who is active in the management of the entity and who has been convicted of a public entity crime. The term "affiliate" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in the management of an affiliate. The ownership by one person of shares constituting a controlling interest in another person, or a pooling of equipment or income among persons when not for fair market value under an arm's length agreement, shall be a prima facie case that one controls another person. A person who knowingly enters into a joint venture with a person who has been convicted of a public entity crime in Florida during the preceding 36 months shall be considered an affiliate.

4. I understand that a "person" as defined in Paragraph 287.133(1)(e), Florida Statutes means any natural person or entity organized under the laws of any state or of the United States with the legal power to enter into a binding contract for the provision of goods or services let by a public entity, or which otherwise transacts or applies to transact business with a public entity. The term "person" includes those officers, directors, executives, partners, shareholders, employees, members, and agents who are active in management of an entity.

5. Based on information and belief, the statement that I have marked below is true in relation to the entity submitting this sworn statement. (Indicate which statement applies.)

☐ Neither the entity submitting this sworn statement, nor any officers, directors, executives, partners, shareholders, employees, members or agents who are active in management of the entity, nor any affiliate of the entity have been charged with and convicted of a public entity crime subsequent to July 1, 1989.

☐ The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989.

☐ The entity submitting this sworn statement, or one or more of the officers, directors, executives, partners, shareholders, employees, members, or agents who are active in management of the entity, or an affiliate of the entity has been charged with and convicted of a public entity crime subsequent to July 1, 1989. However, there has been a subsequent proceeding before a Hearing Officer of the State of Florida, Division of

Administrative Hearings and the Final Order entered by the Hearing Officer determined that it was not in the public interest to place the entity submitting this sworn statement on the convicted vendor list. (Attach a copy of the final order)

I UNDERSTAND THAT THE SUBMISSION OF THIS FORM TO THE CONTRACTING OFFICER FOR THE PUBLIC ENTITY IDENTIFIED IN PARAGRAPH 1 (ONE) ABOVE IS FOR THAT PUBLIC ENTITY ONLY AND, THAT THIS FORM IS VALID THROUGH DECEMBER 31 OF THE CALENDAR YEAR IN WHICH IT IS FILED. I ALSO UNDERSTAND THAT I AM REQUIRED TO INFORM THE PUBLIC ENTITY PRIOR TO ENTERING INTO A CONTRACT IN EXCESS OF THE THRESHOLD AMOUNT PROVIDED IN SECTION 287.017, FLORIDA STATUTES FOR CATEGORY TWO OF ANY CHANGE IN THE INFORMATION CONTAINED IN THIS FORM.

_____
(Signature)

STATE OF FLORIDA
COUNTY OF _____

Sworn to and subscribed before me on this _____ day of _____, 20_____ by _____ who □ is personally known to me or who □ has presented the following type of identification: _____.

_____
Signature of Notary Public, State of Florida

_____
Notary seal (stamped in black ink)
OR
Printed, typed or stamped name of Notary and Commission Number

SECTION IX
PROJECT DESIGN CRITERIA
AND MANUAL SPECIFICATIONS

PROJECT DESIGN CRITERIA
AND MANUAL SPECIFICATIONS
Requirements

OWNER:

MARTIN COUNTY SCHOOL DISTRICT

DATE: February 5, 2019

MARTIN COUNTY SCHOOL DISTRICT
FACILITIES/PLANNING/CONSTRUCTION
1050 SE 10TH STREET
Stuart, FL 34994

TABLE OF CONTENTS

MCSD 2018 Design Criteria
MCSD Close-Out List

PROJECT MANUAL

01 25 13 PRODUCT SUBSTITUTION PROCEDURES
01 29 00 PAYMENT PROCEDURES
01 31 00 PROJECT MANAGEMENT AND COORDINATION
01 32 16 CONSTRUCTION PROJECT SCHEDULE.
01 33 00 SUBMITTAL PROCEDURES
01 35 53 SECURITY PROCEDURES
01 42 00 REFERENCE STANDARDS
01 45 00 QUALITY CONTROL
01 56 00 TEMPORARY BARRIERS AND ENCLOSURES
01 66 00 PRODUCT STORAGE AND HANDLING REQUIREMENTS
01 74 00 CLEANING AND WASTE MANAGEMENT
01 78 00 CLOSEOUT SUBMITTALS
02 41 13 SELECTIVE DEMOLITION
02 41 16 BUILDING DEMOLITION
07 62 00 FLASHING AND SHEET METAL
32 31 13 CHAIN LINK FENCES AND GATES

MCSD
DESIGN CRITERIA
2018

ARCHITECTURAL DESIGN
CRITERIA TABLE OF CONTENTS

GENERAL

CRITERIA

A. SITE REQUIREMENTS

1. SITE DESIGN
2. VEHICULAR ACCESS AND OFF-STREET PARKING
3. COVERED WALKWAYS
4. EXTERIOR SIGNAGE
5. SITE FURNISHINGS

B. OURDOOR ATHLETIC AND PLAY FACILITIES

1. GENERAL
2. ELEMENTARY LEVEL
3. MIDDLE SCHOOL LEVEL
4. HIGH SCHOOL LEVEL

C. BUILDING REQUIREMENTS

1. MATERIALS
2. GENERAL REQUIREMENT
3. FULLY SPRINKLER ALL NEW BUILDINGS
4. BUILDINGS AND ENTRY
5. BUILDING CIRCULATION
6. BUILDING(S) AND ENERGY
7. EXTERIOR DOORS
8. HORIZONTAL SURFACES
9. ACOUSTICAL REQUIREMENTS
10. WALLS
11. CEILINGS
12. GOLF CART STORAGE/CHARGING AREA
13. KITCHENS
14. TOILET ROOMS

D. CASEWORK/CABINETS

E. THERMAL AND MOISTURE PROTECTION

1. WATERPROOFING AND VAPOR RETARDERS
2. INSULATION
3. FIREPROOFING AND FIRESTOPPING
4. ROOFING
5. FLASHING AND SHEET METAL.
6. ROOF SPECIALTIES AND ACCESSORIES

F. DOORS AND WINDOWS

1. GENERAL

2. DOORS AND FRAME
3. WINDOWS
4. FINISH HARDWARE
5. GLAZING

G. FINISHES

1. GENERAL
2. FLOOR FINISHES
3. WALL FINISHES
4. CEILING FINISHES
5. PAINT FINISHES

H. SPECIALTIES

1. INSTRUCTIONAL BOARDS
2. TOILET PARTITIONS AND PRIVACY SCREENS
3. WALL LOUVERS
4. FLAGPOLES
5. IDENTIFYING DEVICES - SIGNS
6. LOCKERS
7. FIRE EXTINGUISHERS
8. WALKWAY COVERS AND METAL CANOPIES
9. METAL SHELVING {UTILITY STORAGE)
10. TOILET ROOM ACCESSORIES

I. EQUIPMENT

1. APPLIANCES
2. ATHLETIC EQUIPMENT
3. GYMNASIUM DIVIDERS

J. FURNISHING

1. AUDITORIUM SEATING
2. TELESCOPING BLEACHERS

K. SPECIAL CONSTRUCTION

1. HIGH SCHOOL STADIUMS
2. PORTABLE EXTERIOR BLEACHERS

L. CONVEYING SYSTEMS

1. PASSENGER ELEVATORS
2. WHEELCHAIR LIFTS

APPENDIX

A. SOUND RATINGS

B. MOUNTING HEIGHTS

C. HIGH SCHOOL APPLIANCES

D. ELEMENTARY SCHOOL APPLIANCES

E. MIDDLE SCHOOL APPLIANCES

ARCHITECTURAL DESIGN CRITERIA

GENERAL

A. The Design Professional shall use these guideline documents in conjunction with the Educational Specifications, MCSD Guideline Specifications, and the contract documents to develop the District's facilities.

B. The Design Professional shall coordinate the work under this section with Civil, Electrical, Mechanical, Plumbing, and Structural Design Criteria:

255.2575 Energy-efficient and sustainable buildings.—

(1) The Legislature declares that there is an important state interest in promoting the construction of energy-efficient and sustainable buildings. Government leadership in promoting these standards is vital to demonstrate the state's commitment to energy conservation, saving taxpayers money, and raising public awareness of energy rating systems.

(2) All county, municipal, school district, water management district, state university, Florida College System institution, and state court buildings shall be constructed to comply with a sustainable building rating system or a national model green building code. This section applies to all county, municipal, school district, water management district, state university, Florida College System institution, and state court buildings the architectural plans of which are commenced after July 1, 2008.

(3) St. Petersburg College may work with the Florida College System and may consult with the University of Florida to provide training and educational opportunities that will ensure that green building rating system certifying agents (accredited professionals who possess a knowledge and understanding of green building processes, practices, and principles) are available to work with the entities specified in subsection (2) as they construct public buildings to meet green building rating system standards. St. Petersburg College may work with the construction industry to develop an online continuing education curriculum for use statewide by builders constructing energy-efficient and sustainable public sector buildings and students interested in the college's Green/Sustainability Track in its Management and Organization Leadership area of study. The curriculum developed may be offered by St. Petersburg College or in cooperation with other programs at other Florida College System institutions.

(4)(a) All state agencies, county officials, boards of county commissioners, school boards, city councils, city commissioners, and all other public officers of state boards or commissions that are charged with the letting of contracts for public work, for the construction of public bridges, buildings, and other structures must specify in the contract lumber, timber, and other forest products produced and manufactured in this state, if wood is a component of the public work, and if such products are available and their price, fitness, and quality are equal.

(b) This subsection does not apply:

1. To plywood specified for monolithic concrete forms.

2. If the structural or service requirements for timber for a particular job cannot be supplied by native species.

3. If the construction is financed in whole or in part from federal funds with the requirement that there be no restrictions as to species or place of manufacture.

4. To transportation projects for which federal aid funds are available.

History.—s. 22, ch. 2008-227; s. 6, ch. 2011-222; s. 35, ch. 2013-15; s. 5, ch. 2013-193.

A. Practice Safe school design principles through Crime Prevention Through Environmental Design "CPTED" and Florida Safe School Design Guidelines.

C. Use recycled building products wherever practical and economically feasible, such as acoustical ceiling tile, structural steel, concrete, or other economically recyclable building materials.

D. Goals:

1. Establish performance-oriented design standards to improve the function, appearance, and

safety of the school campus.

2. Establish design guidelines that address architectural elements, building siting, tree preservation and "fit" within the community.
3. Provide a positive learning environment for students, faculty, visitors and the community.
4. Provide design sensitive to existing neighbors and community.
5. Promote public health, safety, welfare and a nurturing learning environment.

E. Division format utilizes Construction Specification lnstitute's current Edition of MasterFormat® Numbers and Titles. This system contains 48 Division and subsections and documents shall contain the following elements, as required:

1. Div 01-General Requirements.
2. Div 02-Existing Conditions.
3. Div 03-Concrete.
4. Div 04-Masonry.
5. Div 05-Metals.
6. Div 06-Wood, Plastics, and CompositesCasework/Cabinets.
7. Div 07-Thermal and Moisture Protection.
8. Div OB-Openings.
9. Div 09-Finishes.
10. Div 10-Specialties.
11. Div 11-Equipment.
12. Div 12-Furnishing.
13. Div 13-Special Construction.
14. Div 14-Conveying Systems.
15. Div 21-Fire Suppression.
16. Div 22-Plumbing.
17. Div 23-Heating, Ventilating, and Air Conditioning.
18. Div 26-Electrical.
19. Div 27-Communications.
20. Div 28-Electronic Safety and Security.
21. Div 31-Earthwork.
22. Div 32-Exterior Improvements.
23. Div 33-Utilities.

F. The Architect is the person responsible for the design and development of project documents including consultants' documents.
G. Design shall incorporate the latest design requirements and/or code requirements.
    1. Florida Building Code (FBC). Including Sections 453 and 468.
    2. Florida Accessibility Code (FAC).
    3. Florida Fire Prevention Code (FFPC).
    4. State Requirements for School Facilities (SREF).
    5. Educational Specifications (Ed Specs)
    6. District Design Guidelines and Specification Guidelines.
H. Submittal requirements as listed in District Guidelines and Guideline Specifications.
I. The Criteria shall not limit or restrain the performance and liability of the Professional or Professionals responsible for the integrity and performance of the structure.
J. The Criteria is applicable to new construction and to the remodeling and renovation of existing facilities.
K. The use of the Criteria in this document does not exempt the Design Professionals from compliance with federal or state code, or standards controlling building design and construction.

CRITERIA

A. SITE REQUIREMENTS
    1. Site Design
        a. The site shall function to reinforce the educational philosophy of the School District.
        b. Site design shall address the relationships of site elements to the building, streets and neighbors.
        c. Sites shall have sidewalk access to the schools along school boundaries and along the main entrance to the building.
        d. Busses, automobiles and service vehicles shall be kept separated on the site. Two or more access drives are recommended.
        e. Site design shall maximize the use of the available site area.
        f. Design the site allowing for the development of the programmed playfields.
            1) Orient and locate playfields, parking, service drives, drop-off zones, and bus loading zones to reduce the cost of construction, and facilitate connecting of program elements without requiring pedestrians to cross vehicular traffic lanes.
        g. The site shall comply with CPTED and Florida Safe School Design Guidelines.
        h. The NE shall work with the District Planning and Design staff in coordinating local zoning requirements with the District requirements and goals.
        i. Coordinate building setbacks requirements with FBC Section 453 & 468 and local authority having jurisdiction.
        j. Provide a design, which accommodates space for future classrooms and core area for growth or classroom reduction (Permanent or relocatable type construction) with appropriate utility connections.
    2. Vehicular Access and Off-street Parking
        a. NE shall coordinate traffic circulation and parking with District Staff.
        b. See the Civil Design Criteria for access, circulation, parking requirements, and other vehicle and pedestrian requirements.
        c. See Electrical Design Criteria for lighting and other electrical requirements.
    3. Covered Walkways
        a. Design covered walkways from parking and drop off areas to the building to minimize number and lengths. Combine where possible the pickup and dropoff canopy to service both private vehicles and bus pick up and drop off on either side of one walkway canopy.

b. Covered walkways shall be provided continuous along the entire length of the path they protect, but not cross-vehicular drive lanes, parking lots, or loading or service areas.
c. The covered walkway shall be the width of the walkway (or required width) plus 1' on each side.
d. Provide proper lighting see Electrical Design Criteria for light levels.

4. Exterior Signage
   a. Traffic control and signage shall comply with requirements of Martin County, School District, FBC, and FOOT.
   b. Pedestrian oriented signage shall comply with requirements of the School District Guideline Specifications and FBC.
   c. Signage shall clearly identify, indicate, and provide information as required.
      1) Provide control of vehicular and pedestrian traffic, identify the school and its various departments, and provide general information.
   d. The A/E shall develop a comprehensive signage program coordinated with programmatic and space requirements of the Educational Specifications, Design Guidelines and Guideline Specifications, this Document, the Contract, and FBC.
      1) Signage program shall identify a standard graphic system for signage, consistent with the project design concept.
      2) Provide stand alone marquee-type sign at main school entrance (See School District's Design Guideline Dwg.).
      3) Building signage shall identify buildings by number and name per FISH requirements (See School District's Design Guideline Dwg.).
   e. Sign and letter size
      1) Vehicular oriented signs shall be large enough to have readability from 100', and pedestrian oriented signs from 20'.

5. Site Furnishings
   a. Bicycle Racks:
      1) Locate at main student entry point(s) with direct or remote camera surveillance from the Administrative main office area.
      2) Permanently mount racks to the concrete paving per manufacturer requirements.
      3) Locate racks to prevent crossing of bicycle traffic with vehicular or pedestrian traffic.
      4) Provide 8' high vinyl coated chain link fenced enclosure with 4'-0" lockable gate.
      5) Number and size of bicycle racks will depend on school type, location and demography of attendance zone.
   b. Design/select the site/exterior light fixtures and poles in conjunction with the building design concept (see District's Electrical Design Criteria).
   c. Provide one 30' flagpole with LED in ground up lighting for each flag pole at main entrance to Elementary and Middle Schools and three (25', 25' & 30") flagpoles at main entrance to High Schools.
      1) Do not place flagpoles to interfere with pedestrian or vehicular traffic, or present an obstacle.
   d. See Civil Design Criteria for information on fencing material, height, and location.

B. OUTDOOR ATHLETIC AND PLAY FACILITIES
1. General
   a. Provide access to athletic facilities via interconnected paved walkways, placed to coincide with the natural flow of pedestrian traffic and comply with FBC Accessibility requirements.
   b. Coordinate locations of all in-ground metal inserts for Physical Education nets, poles and equipment with surface markings of courts, fields and facilities as applicable to each sport.

c. Architect shall coordinate locations of all junction boxes, grates, and other objects in athletic and play fields with other trades to prevent placement of these items in the fields causing potential hazards to the students.
d. Provide positive drainage away from facilities (See Civil Design Guidelines).
e. Provide for electric drinking fountains under covered playcourts or under roof of Field Concession Buildings where toilet facilities are located.
f. Provide fences for athletic facilities in accordance with Facilities Planning for Physical Activity and the National Federation "Court and Field Diagram Guide".
g. The designer shall consider the following facilities for the sports fields: P.E. storage, restrooms, concession stands, bleachers, and ticket booths.
    1) Facilities shall be accessible to both home and visitor sides with no cross traffic between ticket purchases and other facility traffic.

2. Elementary Level
    a. Play fields shall be designed with two ballfields aligned to allow one soccer field in the same ballfield area, three volleyball/basketball/tennis combination courts on the same concrete slab, one covered concrete playcourt 40' x 60' with 14' minimum roof clearance. Locate PE Storage, water fountains and Toilets at covered playcourt.
    b. Provide separate fenced play areas for kindergarten and primary play areas with play equipment per the Educational Specifications for Kindergarten students.
    c. Intermediate play area shall be per Educational Specifications for Primary students.
    d. See Educational Specifications for other requirements.
3. Middle School Level
    a. Provide asphalt 6-lane 400-meter track.
        1) Track shall encircle the soccer field. Drainage shall be to area inlets at edge of track surface.
    b. Play fields shall be designed for one baseball and one softball ballfield, four basketball and two tennis courts.
    c. See Educational Specifications for other requirements.
4. High School Level
    a. Use the National Federation's "Court & Field Diagram Guide" for field dimensions and requirements.
    b. Track and Field Facility
        1) When possible, align the long dimension of the track in north-south direction.
        2) Design track with an 8-lanes, with each lane a minimum 46" wide.
        3) Provide rubberized track surface, with the surface covering the concrete curbing on both sides of track.
        4) When possible keep the discuss-throw and the shot-put events out of the infield, but keep these two events in close proximity to each other.
            a) Provide a cage around the discus throw circle.
            b) Provide drain in the discus and shot put circle.
        5) Place the jumping events in one of the two curve areas.
            a) Provide jump areas at each end of runway for the long/triple jump and pole-vault.
            b) Extend the runway surface for the long/triple jump over the concrete curb for the pit.
            c) Extend rubberized high jump surface over any concrete curbing.
        6) When possible, provide synthetic surface over one of the curves forming a "D", for the jumping events. (Provides more flexibility and lower turf maintenance.)
        7) Provide dry-storage area near the track for track and field equipment.
        8) Locate the scoreboard outside of the track infield on one of the curves.
        9) Provide site lighting for field and track events.

c. Baseball/Softball
    1) Align playing diamond in north-south direction.
    2) Provide ample space for relief pitcher warm-up and batting practice areas.
    3) Center scoreboard in centerfield on home base and the pitching rubber, above the safety backdrop for batters. (Use same supports for both)
    4) Consider storage area for equipment near the field(s).
    5) Provide lighting for all playfields (see Electrical Design Guidelines).
d. See Educational Specifications for other requirements.

C. BUILDING REQUIREMENTS
1. Materials
    a. Shall be durable, permanent, vandal-resistant, easily maintained, and within the limits set by function, and code.
2. General requirement
    a. The design of each project shall address the following.
        1) Safety of students, faculty, staff and visitors.
        2) Fulfillment of all programmatic requirements and Educational Specifications.
        3) Enhancement of the instructional process.
        4) Campus shall be resistant to unauthorized intrusion at any time, yet provide for the entry of visitors through a control point during normal operating hours.
        5) Zoning for different day and evening functions and circulation patterns.
        6) Life cycle cost effectiveness.
        7) Accessibility according to FBC, Accessibility of the FBC.
        8) Ease of pedestrian and vehicular circulation within and around buildings.
3. Provide fully functional fire sprinkler system for new buildings and major renovations to existing buildings.
    a. Renovations and additions to existing facilities are determined on a project-by-project basis.
4. Buildings and Entry
    a. Shall be inviting with a clear, single, centrally located entry to the facility.
    b. The main entry shall be clearly visible and easily identifiable from all major off site access routes to the school.
    c. Locate administrative offices with a clear view of this entry for ease of surveillance and as a clearly identifiable designation for school visitors.
    d. Limit perimeter openings to those required for Life Safety conformance and necessary for independent public use of the project elements e.g. an auditorium, a gymnasium.
        1) Main entries shall be visually recognizable and inviting.
        2) Coordinate required openings with security and surveillance system requirements.
    e. Provide separate service access drive to the Food Service/Kitchen area and Custodial Receiving area.
    f. Group all program elements requiring access by service vehicles to minimize traffic.
        1) Provide sufficient space for vehicles to maneuver.
5. Building Circulation
    a. Orientate circulation to provide efficient, convenient access to all spaces.
    b. Minimize pedestrian congestion at doors, stairs, intersecting corridors, and entrances into large rooms off of corridors.
    c. Recess entry doors off main corridors and.
    d. Provide vision panels in all doors to student occupied spaces.
    e. Design multi-story building to limit the number of elevators required.

1) Elevator access to upper floors of buildings two stories or more.

f. Provide impact and abuse resistant materials in all circulation spaces.
   1) Finishes shall be cleanable and graffiti resistant.

6. Building(s)
   a. Building(s) should be energy smart and environmentallyfriendly.
   b. Glazing, shall minimize direct sunlight into the building on east, west and southwest building exposures.
   c. Provide sun control measures or light shelves on exterior for allowing reflected light into interiors.
   d. Provide natural light to all student occupied spaces.
7. Exterior Doors
   a. Protect all exterior entry doorways by an overhang or recess into walls.
   b. Minimum protective overhang or recess shall be 4', perpendicular to the plane of the door(s), and 18" on each side of the door jamb, parallel tothe plane of the door(s).
   c. Design exterior soffits to prevent rainwater traveling horizontally on the underside of the soffit.
   d. Engineer the exterior soffits to resist wind loads per ASCE 7-10 for wind speed indicated (may be interpolated depending upon site location).
   e. Provide control joints as necessary to control cracking.
   f. Architect shall use an overhang or walkway canopy at exterior access doors to access Mechanical, Storage, Electrical, and other similar locations.
8. Horizontal Surfaces
   a. Slope exterior horizontal surfaces to drain according to FBC Section 453, 468 and FBC, Accessibility:
   b. Provide a minimum slope of¼" (2%) per foot at parapet tops, windowsills, tops of walls, and slope roofs away from the building.
   c. Design horizontal surfaces to prevent ponding.
   d. Provide a minimum slope of ¼" perfoot at exterior walkways, stair treads, landings, sidewalks, or other exterior walking surfaces.
   e. Provide positive drainage for parking lots, paved courts, receiving areas, passenger drop-offs, and any other paved areas.
   f. Exterior and interior walking surfaces shall have textured or other slip-resistant finishes with a maximum cross slope of¼" (2%) and slope away from the building.
9. Acoustical Requirements
   a. Use volume, geometry, ceiling materials with high NRC values, acoustical panels, wall treatment, and flooring materials as required for a cost-effective solution to sound transmission between spaces.
   b. Substitutions or revisions during construction shall comply with the originalacoustical analysis of the space involved, or provide a revised analysis.
   c. Sound-insulate spaces containing noise-producing activities from adjacent spaces as required.
   d. Provide appropriate additional acoustic treatment to control undesirable noise within large open spaces such as Auditoriums, Gyms, Media Centers, Staff and Student Dining, and Music areas.
   e. Locate acoustical wall treatment at least 7'- 2" AFF.
   f. Sound Ratings are based on information from ANSI S12.60-2002 "Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools. (See APPENDIX A herein to determine specific sound ratings for individual spaces).

10. Walls
    a. UL fire wall, floor, ceiling and penetration rating numbers and descriptions shall accompany all assemblies & penetrations that require a fire-rated system.
    b. Provide minimum 1-1/2" rigid insulation at the exterior face of all concrete or concrete masonry walls of conditioned spaces as required to meet the Energy Code requirements.
    c. Interior wall systems
        1) Corridor, stairway, gymnasium and cafeteria partitions/walls shall resist impact and abrasion.
        2) Interior walls shall be graffiti and mold resistant in addition to being appropriate for location and use.
        3) Wall systems shall provide the appropriate fire rating and or sound rating.
11. Ceilings
    a. Ceilings group toilet rooms shall be a continuous hard surface.
    b. Ceilings in individual toilets may be cleanable, humidity and mold resistant 2' x 2' acoustical lay-in type ceiling systems.
    c. Ceiling/roof or ceiling/floor penetrations that require a fire rating shall meet requirements of FBC.
    d. Minimum ceiling heights:

1) Career Labs	Per Educational Specifications, but not less than 1O' AFF.
2) Classrooms	9' AFF
3) Music rooms	12' -14'AFF (Middle and High Schools), 9' (Elementary Schools)
4) Group toilets	9' AFF
5) Cafeteria/Multipurpose	14'-6" if area has attached Stage; 12" elsewhere.
6) CCTV-ES	12'
7) CCTV - MS & HS	16' AFF
8) Media Centers	12' AFF (1O' at perimeter)
9) Covered Play Shelter Area	14' AFF(Minimum)
10) Locker rooms MS & HS	9" AFF
11) Gymnasiums MS & HS	24' clear to underside of structure.
12) Art rooms MS & HS	12' AFF
13) Art Room ES	10' AFF
14) Other rooms	As appropriate for their use

12. Golf Cart Storage/Charging Area
    a. Locate Golf Cart Storage/Charging in roofed and fenced outside storage area adjacent to Central Receiving Area.
    b. Provide electrical connections for charging of carts, coordinate with Electrical Design Guidelines and Project Electrical Engineer.
    c. Provide the required ventilation for the charging of carts and or storage of flammable material, coordinate with Mechanical. Engineer.
    d. Locate in an area convenient to exterior and roads or sidewalks.
    e. See Educational Specifications for number of charging stations and storage capacity.
13. Kitchens
    a. Follow Educational Specification requirements for Food Services.
    b. Provide bell located within Kitchen work area to notify kitchen staff when telephone is ringing in Food Manager's Office.

c. Provide safe for Food Manager's Office in built-in cabinetry on shelf under desk.
d. Walkin cooler and freezer shall be wired to emergency generator power system.
e. Locate a weatherproof plug outside Kitchen at delivery area so that a refrigerated van may plug into the school's electrical service to power the truck's refrigerated storage if school's cooler or freezer is not functional.
f. Provide a Sensaphone in Kitchen to automatically call emergency contact number to alert staff that power has been interrupted.

14. Toilet Rooms
    a. General requirements.
        1) Group toilets near assembly areas such as Gymnasiums, Auditoriums, Media and Food Service to function as both student and public toilets to greatest extent possible. They should be available to the public without causing security breaches to other areas of the campus.
        2) Avoid locating single use toilet rooms off main circulation corridors.
        3) Locate toilet rooms conveniently and appropriately throughout the campus, and size toilet rooms per FPC requirements based on the occupant use of the room or area.\
        4) Cafeteria, gymnasium, stadium, and auditoriums are assembly occupancies and shall comply with "Potty Parity" requirements.
        5) Provide one boy's and one girl's restroom between pairs of intermediate elementary classrooms (grades 4-5) accessible from both classrooms via interconnecting corridor and one unisex toilet per each kindergarten and primary classroom (K through grade 3) opening directly into classrooms.
        6) Provide student and staff restroom facilities in the Covered Play Shelter Area. Staff Office shall have shower capability by using perennial spray attachment on wall and slope flooring to central drain.
        7) Individual toilets shall have foam soap dispensers and paper towel dispensers; group toilets shall have foam soap dispensers and electric hand dryers.
        8) Areas requiring male and female staff toilet rooms:
            a. Kitchen.
            b. Staff Dining.
            c. Teacher Planning Areas (if in excess of 200' from other staff toilets).
            d. Main Administration Area.
            e. Media Center.
        9) Student areas requiring group toilet rooms:
            a. Cafeteria, Gymnasium, Auditorium, Football Stadium, Concession Area if separate from Stadiums and Ballfield seating areas in excess of 200' from other toilet facilities.
        10) Provide single toilet room with showering capability in ESE Rooms required by SREF to have self-contained toilets, Clinic, Custodial/Building Receiving Area and Physical Education Teacher Planning Offices.
            a. Provide hot water in restrooms with showering capability by using perennial spray attachment on wall and slope flooring to central drain.
            b. No other toilet spaces require hot water.
        10) See Mechanical Design Guidelines for additional plumbing requirements.

D. CASEWORK/CABINETS

See Educational Specifications for location of required Cabinets and Casework.

a. Provide locks for classroom base cabinets, teacher desk cabinets, reception area cabinets, and cabinets in the Clinic.
b. Cabinetry shall be plywood. Particle board is not permitted.

c. Provide AWi "Custom Grade" overlay design with plastic laminate finish on exposed faces.

E. THERMAL AND MOISTURE PROTECTION
1. Waterproofing and Vapor Retarders
a. Waterproofing
1) Provide waterproofing at floors and walls below grade to prevent water infiltration to the building interior caused by hydrostatic pressure or other water conditions.
2) Provide waterproofing at the inside face of masonry cavity walls to receive insulation boards and brick veneer.
3) Do not use planters that abut exterior walls.
b. Vapor and Radon Retarders.
1) Vapor barriers on exterior walls shall be on the warm side of the wall (the outside).
2) Follow the Florida Standard for Radon-Resistant New Commercial Building Construction, or the EPA Handbook for Sub-Slab Depressurization for Low Permeability Fill Material.
3) Provide details of perimeter, penetrations, and joint conditions.
2. Insulation
a. Select rigid closed cell board or closed cell foam insulation system to comply with the Chapter 13 FBC State Energy Conservation Code.
3. Fireproofing and Firestopping
a. Fireproofing and firestopping methods shall be per FBC and NFPA.
b. Provide descriptions and approval references for firestopping systems used.
c. Specify fire protection at penetrations through fire rated assemblies as required.
1) Provide description, test number, and detail of UL fire rated system for each type penetration.
4. Roofing
a. General
1) The Architect shall use standing seam metal roofing system unless other more appropriate roofing system is approved by Director of Facilities.
2) Architect shall submit in writing alternative roofing for consideration.
3) Roof designs shall comply with the following.
a) Uplift requirements based on the basic wind velocity pressures for the project according to the most stringent applicable requirements among the following.
b) FBC and Section 453 & 468.
c) ASCE 7-10 and Table 1609 mph wind loading indicated for project site.
4) School District prefers one roofing system per campus; use of an additional roofing system(s) requires approval on a per condition basis.
a) If using different roofing system(s), provide a parapet, change of elevations, or other means of terminations to define warranty/liability limits and maintenance concerns.
b) Design the roof to eliminate ponding with sloping surface to remove rainwater by scuppers, overflow scuppers, gutters/downspouts complying with FPC.
c) The use of low-slope roofs and interior roof drains require prior approval of School District.
5) Connect all primary roof drainage systems to the storm water systems below grade.
6) Products containing asbestos are not allowed (FBC 453 & 468). Verify that roofing cement doesn't contain asbestos and solder doesn't contain lead.

7) If low-slope roof systems are approved, provide Traffic Pads only at roof top mounted mechanical equipment and at roof access hatches, and complying with the following requirements.
    a) Install traffic pads on roofs to form a continuous circle around high traffic elements such as roof scuttles, roof stairs, and roof-mounted equipment.
    b) Traffic pads between the above elements are not required.
    c) Size traffic pads around equipment to protect roofing during maintenance of roof top equipment.
    c) Clearly indicate traffic pad locations on the Construction Documents.
8) Design facilities with minimal Rooftop Mechanical equipment or fans.
    a) Provide mechanical screens for wind and impact protection for equipment on roofs per Code.

5. Flashing and Sheet Metal
    a. Scuppers, gutters, downspouts, and flashing metal shall be stainless steel complying with **SMACNA** standards.
        1) Locate downspouts and scuppers to discharge in areas away from student traffic areas.
        2) Provide downspouts that are not climbable.
        3) Place downspouts in areas limiting exposure to hazards, such as lawn equipment. If not possible use materials resistant to physical damage from such equipment.
        4) Minimum size downspouts is 6" x 6" square stainless steel, located not more than 30' o.c.
        5) Locate gutters at edge of roof perimeter; do not build gutters into roof or behind parapets.
        6) Minimum size gutters is 8" x 8" square stainless steel.
        7) Connect gutters, downspouts, and roof drains to underground storm drainage systems.
        8) Secondary roof drainage system shall be separate from the primary drainage system.
6. Roof Specialties and Accessories
    a. Roof Expansion Joints.
        1) Allow for expansion and contraction to minimize cracking and deterioration of building component materials.
        2) Provide roof expansion joints such that the largest single area of roof is no greater than 150' x 150', or less as required by the roof manufacturer.
    b. Roof Access.
        1) Provide safe and secure access by access hatches or roof ladders to access adjoining roofs for all roofs unless adjoining roofs are 42" or less in elevation difference.
        2) Do not use fixed external ladders from grade for roof access.

F. DOORS AND WINDOWS
1. General
    a. Integrate doors and windows into the design of the facility to provide access, egress, light, and ventilation while:
        1) Meet life safety, wind and impact load requirements.
        2) Design shall be vandal resistant for heavy usage.
        3) Incorporate safety, security, and maintenance features as required.
2. Doors and Frames

a. Acoustical doors shall be hollow metal filled with glass fiber or be solid core wood with STC ratings according to program requirements.
    1) Provide sound seals and drop seals where reduction of sound transmission is critical.
    2) Vision panels in acoustical doors shall be resiliently mounted double-glazed with ¼" and ¾" tempered glass, except when other glazing is required to comply with fire rating.
b. School District requires use of aluminum doors and door frames only at entrances to Administrative, Media Centers, Gymnasiums and Dining Areas. All other exterior doors and frames shall be hollow metal painted. Interior doors shall be solid wood with stain grade finish.
c. All exterior doors shall be recessed or covered by canopies to prevent water intrusion.
d. All hollow metal doors shall be painted and have galvanized (G-90) coating.
    1) Full louvered doors shall have a mid-rail.
    2) Louvers to be Y-inverted profile, weather-resistant, and equal to thickness of door.
e. Provide access doors of a size required by the code, equipment manufacturer, or type of access, but in no case less 12" x 12" where hand access is sufficient.
f. Provide sound rated solid core wood doors (2) at mechanical equipment rooms opening to the building interior. Mechanical and Electrical doors shall open to interior areas not subject to high student traffic.
    1) Include sound-seals and sealed thresholds at mechanical room locations.
g. Fire and/or smoke separation doors.
    1) Provide magnetic hold open devices activated by the fire alarm system on doors dividing corridors and on doors in high traffic stairways.
h. Doors
    1) Exterior doors shall be painted galvanized steel (G-90) to prevent corrosion. Do not use wood doors on building exterior.
    2) Interior doors shall be solid core wood with lifetime warranty.
    3) Occupant swing doors shall be a minimum size of 3' wide x 7' high x 1¾" thick.
    4) Doors shall be large enough to accommodate the largest piece of equipment or furniture scheduled for the space, see Educational Specifications for furniture/equipment requirements.
    5) Middle and High School Kitchen receiving doors shall be 2-3'-0" or x 7'-0" high x 1¾" thick, out-swinging HM, and Elementary School Kitchen receiving door shall be 1-4'- 0" x 7'-0" high x 1¾" thick, out-swinging HM door.
i. Interior or exterior pairs of doors shall not have mullions unless required by code and shall have a keyed removable center mullion.
    1) Mullions shall not be used in mechanical and storage room doors.
    2) DO NOT use fixed mullions.
j. Vision Panels
    1) Provide vision panels at all door entrances into classrooms, laboratories, clinics, stairways, and other normally occupied student spaces. Provide sound reducing gasketing at doors from media to Control Room at CCTV Studio, and practice rooms in music suites.
        a) Vision panel shall be 3" wide x 33" high and located minimum 6" from latch edge of door.
        b) Locate bottom of vision panels minimum 36" AFF and maximum top at 78" AFF, unless the door has a panic bar, and then locate bottom edge of vision panel at top edge of the panic bar.
    2) Provide vision panels or glazed areas in doors at main entrances into the building.
k. View ports

1) Provide½" diameter view ports with 180° view (peep holes), in place of door vision panels at the following locations.
    a) Kitchen receiving door and shall also be equipped with a doorbell in adjacent wall.
    b) Exterior entrance/exit doors without vision panels.
    c) Comply with fire ratings.

3. Windows
    a. Exterior Windows shall be either impact resistant anodized clear or bronze aluminum operable awning or casement type windows and provide the following:
        1) Required light and ventilation per codes.
        2) Proper attachment/support system to withstand wind loads based on ASCE 7-10 for wind loading at project location and requirements for impact protection.
        3) Exterior glazing for spaces other than classrooms, shall be impact resistant fixed glazing, either recessed from face of building or have sun shading devices.
    b. Maximum head height of windows shall be not less than 3" below ceiling elevations.
    c. The interior sill of window shall not be less than 4" above abutting built-ins or other FF&E.
    d. Muntins shall not be used.
    e. Coordinate exterior mechanical louver sizes and locations to correspond with typical window modulation wherever possible.
    f. Exit stairways, storage rooms, telephone and electric closets, IDF and MDF rooms, mechanical equipment rooms, toilet rooms, custodial closets, vaults, and other similar spaces shall be windowless.
    g. Means of egress shall comply with FBC without compromising window security or aesthetics.
    h. For Buildings not equipped with automatic fire sprinkler systems, indicate locations of fixed and hinged access/egress window panels on Contract Document - Floor plans and elevations, coordinate with the window schedule.
    i. Interior windows shall be provided at following locations:
        1) Teacher planning areas.
        2) Clinic.
        3) Media Center Testing Labs and Group Projects Rms.
        4) Between Control Room and CCTV space, angle window out 15°.
        5) Major Program Spaces and access corridors such as Media, Dining, Career Education Labs, Art labs and other areas as required by the Educational Specifications.

4. Finish Hardware
    a. Hardware shall comply with the following:
        1) Florida Building Code.
        2) Florida Fire Prevention Code
        3) Hardware shall be consistent with the approved/tested door and window assemblies for impact, fire rating and wind loading.
    b. Hardware sets shall list the appropriate door and building numbers, the door schedule shall list the appropriate hardware set numbers, and hardware sets and the door schedule shall comply with:
        1) Each door or pair of doors, gate, roll-up grill, or other opening shall receive a different numerical designation with hand of each door noted.
        2) Door numbering should be progressive and starting clockwise around building as spaces are accessed along main corridors.
        3) Hardware schedule shall include thresholds and note hardware type.

c. Latching Hardware.
   1) Do not use deadbolt locks except as permitted by code and with School District approval.
   2) Provide surface mounted exit devices or intruder classroom function locks at student occupied areas according to School District Hardware Guideline Specifications.
d. Controlling Hardware.
   1) Do not use head or foot bolts on any pair of doors of student occupied spaces.
   2) Door Stops.
      a) Install wall-mounted doorstops at all doors with appropriate backing reinforcement.
      b) Avoid floor-mounted doorstops.
   3) Kick Plates.
      a) Provide at all doors, except to individual spaces in administration areas.
      b) Provide an armor plate at the kitchen receiving door and doors from kitchen to serving line.
   4) Specify surface mounted door closers and exit devices, do not use floor mounted or concealed overhead closers.
   5) Use special delay action closers at doors serving children with disabilities.
   6) Select removable center hardware mullion type based upon exit device and fire rating requirement.
   7) Provide silencers or door seals on door frames.
e. Weather Stripping and Seals.
   1) Provide raised thresholds complying with handicapped access requirements at group or single toilet rooms, kitchens, and custodial closets with sinks or mop receptors to reduce possible flooding of adjacent spaces.
   2) Provide aluminum thresholds at exterior doors to prevent water intrusion.
      a) Do not provide thresholds (other than toilets) at interior doors unless required for soundproofing or carpet separation at labeled doors.
   3) Provide rigid weather-stripping frames of all exterior doors.
      a) Weather stripping at exterior doors shall comply with acoustical requirements.
   4) Provide sound-seals and auto door bottoms at acoustical doors and sound sensitive areas.
      a) Sound seals shall not protrude more than 3/8" from stop surface.
      b) Sound sensitive areas include entrances to media center, auditoriums, band and choral rooms, music suites, practice rooms, CCTV Control Room and CCTV Studio.
f. Hardware Sets
   1) Meet the requirements of the FBC, FAC, and tFFPC for operation.
   2) Hardware shall be compatible with existing school (if project is an addition or renovation).
   3) Locksets shall be compatible with District's master key system.

5. Glazing
   a. Unprotected exterior glass shall be impact resistant and resist wind load requirements at project location per ASCE 7-10 and FBC.
   b. Interior glazing in School District buildings shall be tempered glass. Exterior glazing shall be 9/16" impact laminated glazing.
   c. Glazing in fire-rated doors and walls shall be clear, fire-rated.
   d. Wired glass is not permitted.
   e. Mirrors: See School District Guidelines Specifications for toilet accessories.

G. FINISHES
1. General
a. Provide finish materials durable and suitable for South Florida weather conditions.
b. Finishes shall allow for easy cleaning of graffiti or stains by the custodial staff.
c. Base the design and selection of building finishes on the following.
1) Vandal resistance.
2) Cost effectiveness.
3) Durability.
4) Resistance to cracking and peeling.
5) Resistance to fading or discoloration during use or from exposure to weather, or acids and other chemicals.
6) Weather tightness under hurricane conditions.
7) Absence of excessively rough or sharp textures and features.
8) Use materials with low voe content.
a) Building products shall not contain asbestos.
b) Do not use building products containing lead, formaldehyde, mercury, volatile organic compounds, or any other harmful products that can cause harm to occupants once installed.
b. Do not use vinyl wall coverings on the interior surface of exterior walls.
2. Floor Finishes
a. Select flooring finishes based on durability, initial costs, and maintenance methods/costs.
b. Ceramic Floor Tile.
1) Provide underlayment of ceramic tile floors in all toilet and shower areas to prevent cracking of joints or tile.
2) Use thin set ceramic tile in individual toilets. Use mud set and floor drains in group toilets.
3) Provide slabs with steel trowel and fine broom finishes.
4) Provide a tile cove wall base at areas with a ceramic tile floor.
5) Tile flooring shall be matt finish, suitable for floor use and easily maintainable.
6) Select color of floor tile and grey grout to conceal dirt for low maintenance, avoid very light colors and very dark colors.
7) Provide marble thresholds at doorways or entrances to wet areas.
c. Quarry Tile.
1) Provide 6" x 6" quarry tile in Kitchens, Culinary Arts Labs, and Janitor's Closets.
2) Recess floor slabs receiving quarry tile the depth of the tile and setting bed to provide a level plane at access points.
a) Provide recess slabs with steel trowel and fine broom finishes.
b) Tile shall slope to floor drains.
3) Quarry tile shall be impervious, slip resistant, and be easily cleanable.
4) Provide 6" high quarry tile wall base to match floors.
d. Resilient Flooring
1) Provide resilient tile (VCT) in classrooms, corridors, music rooms, circulation and charging desk areas in media center (carpeting elsewhere), teacher planning, reception areas, cafeteria, food service and custodial offices, Clinic and First Aid areas.
2) Resilient flooring shall be vinyl composition tile.

3) Solid colors may be used as accents or patterns for vinyl composition tile flooring, if approved by School District's Project Manager.
4) Provide metal or vinyl edge guards at flooring transitions.
5) Areas with resilient flooring shall receive rubber cove base.
6) Interior stairs shall receive rubber nosing, risers and treads.
7) Use of polished concrete flooring may be appropriate for use in areas noted for VCT, if approved by Owner's Construction Manager.

e. Carpet
1) Provide sheet carpeting only in Administrative Offices, Conference Rooms, Media Center Reading and Stack areas (not at Charging Desk and circulation areas), and in aisles of the Auditorium.
2) Carpet selection shall be per District's Guideline Specifications .

f. Sealed Concrete Floors
1) Provide sealed smooth finished concrete floors in Central Receiving , Kiln, Mechanical, Electrical, Communication MDF and IDF, and other similar rooms.
2) Provide a translucent, non-yellowing sealer, resistant to moisture and efflorescence, with slip resistant per the general requirements, and does not emit toxins after curing.
3) Use rubber cove wall bases at interior sealed concrete floors.
4) Sealed concrete floors are not an impervious surface.

g. Polished Concrete Floors
1) Polished concrete may be used in assembly or major circulation areas such as Main Entrance Lobbies to Administration, Auditorium or Gym Lobbies, and Dining spaces (See District Guideline Specifications) .

h. Wood Flooring
1) Provide maple wood flooring in High School Gymnasiums, Dance/Multipurpose Rooms. High School Stages shall be painted pine.
2) Synthetic Surface Flooring may be used in Middle School or High School Auxiliary Gyms, and Wrestling/Multipurpose/Dance spaces.
3) Recess floor slabs receiving wood flooring the depth of the wood floor, sleepers, and pads to provide a level plane at access points.
4) Provide tongue and groove, maple or pine as indicated over wood sleepers on cushioning pads according to District's Guideline Specification and the following:
a) Gymnasiums: 5/8" pads.
b) Stage, Gymnastics/dance: 3/8" pads.
c) Use cove rubber bases or other base as recommended by flooring manufacturer.
d) Expansion joint covers shall be stainless steel and flush with flooring.
e) Where exterior door enter directly into the gymnasium, provide mats or dirt gratings for the full width of gymnasium entrance doors securely anchor to the floor.
5) Provide Building Expansion Joints through the entire building (floor, walls, ceiling and roof) and per joint manufacturer's printed recommendations.

i. Specialty Flooring
1) The School District of may consider other specialty types of flooring on a per project basis.

3. Wall Finishes (in assembly and other areas subject to abuse).
a. Select interior finishes based on required fire resistance ratings, STC ratings, initial costs, durability, maintenance methods, and maintenance costs.

1) Skim coat knock-down plaster over impact resistant gyp. bd. or CMU walls in student occupied instructional areas such as classrooms, labs, and main corridors, stairs, and other areas subject to abuse (See District Guideline Specifications).

b. Standard Interior Wall Finishes (not subject to abuse such as offices, office access corridors, or conference rooms).
   1) Paint gypsum board walls with washable, graffiti and mold resistant paint.
   2) Place conduit and plumbing lines within the block cores. Do not channel block wall faces.
   3) UL or STC masonry assembly rating shall comply with applicable fire-resistive or sound rating requirements.
   4) Paint interior exposed block at Building and Custodial Storage, Refuse Rooms, Flammable Storage, Food Storage and Custodial Closets with epoxy paint where exposed to traffic.
   5) Mechanical Rooms shall be covered with acoustical rigid cementitious panels from 18" AFF to 9'-6" AFF on all walls. Remainder of exposed walls shall be painted with washable, graffiti and mold resistant paint.

c. Standard Exterior Finishes.
   1) Brick shall be Utility (Economy Norman) size and shall be standard exterior wall finish. Other products may be approved by School District's Project Manager on specific projects in order to match existing buildings.
   2) See School District Guideline Specification for Brick Masonry.

d. Ceramic Wall Tile
   1) Use in Group Toilet Rooms and Vestibules, Custodian's Closets, Showers/Locker rooms, Kitchen, Snack Bars, Salad Bars, Serving Lines.
   2) In group Toilets and Kitchens, use tile for the entire length and height of walls.
   3) Provide bull nose trim pieces at corners of tile walls and cove bases at floor line.
   4) Do not install ceramic tile over existing ceramic tile.
   5) Apply tile over.
      a) Wallboard designed for use in wet areas and installation of tile in staff or individual toilet rooms.
      b) Waterproof concrete backer boards, reinforced with vinyl-coated, woven glass-fiber mesh in group toilets and toilet rooms that include showers.

e. Acoustically Absorptive Wall Panels.
   1) Use to achieve acceptable NRC and reverberation characteristics in Cafeteria Dining/Multipurpose, CCTV Labs, Media Centers, Mechanical Rooms, Career Education Labs (per Educational Specifications), Auditoriums, Music Rooms, and Gymnasiums.
   2) Panels shall comply with flame-spread ratings.
   3) Provide concealed flush panel attachments.
   4) Fabric covered panels or any other acoustical treatment susceptible to damage in cafeteria dining rooms, music rooms, or any other student occupied spaces shall be at least 7'-2" AFF or installed with other means of protection.

4. Ceiling Finishes
   a. Standard Ceiling Finishes:
      1) 2' x 2' lay-in acoustical ceiling systems manufactured with humidity and mold resistant materials. Grid shall be white.
      2) Do not use "Tegular" ceiling tile.
      3) Cafeteria Kitchens, Salad and Snack and Serving areas shall be 2' x 2' moisture resistant vinyl coated tile lay-in ceiling.

4) Showers, drying and locker rooms, public and student toilets, kiln rooms, and any other high moisture content spaces shall be painted skim coat plaster over cement board or plaster over metal lath ceilings.
5) Staff, individual toilet rooms, and group toilet rooms shall be gypsum board ceilings.
6) Provide access panels through gypsum board and plaster ceilings in sufficient size, number, and location to above ceiling electrical, mechanical, or other elements requiring access.
7) Use stucco for exterior soffits to protect from potential damage by weather, vandalism, or excessive wear.
8) Receiving, custodial, electrical, telephone, and mechanical rooms or closets, unfinished rooms, and other similar spaces may have an exposed painted structure if allowed by fire codes.

b. Ceilings shall provide the required acoustical ratings for specific areas according to Design Criteria - General Considerations.
c. Avoid the use of metal ceilings and metal soffits unless approved by the District Construction Manager.
d. Lay out ceiling tiles to avoid perimeter units of less than 1/2 unit width.
e. Sprinkler heads shall be located in the center of lay-in ceiling tiles.

M. SPECIALTIES
1. Instructional Boards
a. Instructional boards include marker boards and tack boards.
b. Develop a schedule listing sizes, types, mounting heights and methods, colors, and other accessories to coordinate program requirements, built-ins, and FF&E locations.
c. Use Appendix B and FBC for determining mounting heights for the instructional boards.
d. Instructional boards shall be at least 24" from room corners, if room size allows.
e. Size and locate Instructional boards according to Educational Specification requirements.
f. Mount instructional technology equipment in areas noted in Educational Specification requirements.
2. Toilet Partitions and Privacy Screens
a. In-group toilet rooms, provide toilet partitions at each toilet, urinal screens at each urinal, and privacy screens at showers.
b. Toilet stall partitions, privacy screens, and urinal screens shall be solid phenolic resin, providing waterproof non-absorbent surface resistant to marking with pens, pencils, or other writing instruments (Graffiti resistant).
c. Toilet partitions, privacy screens, and urinal screens shall have pilasters floor mounts with overhead bracing, and full-length wall brackets.
1) Wall brackets, boots, and attachments shall be stainless steel.
2) Overhead bracing shall have a metal anti-grip design.
d. Top edges of compartment panels and doors shall be at least 70" AFF, the bottom edge not more than 12" AFF, and pilasters minimum 82" high.
3. Wall Louvers
a. Wall louvers shall be extruded anodized aluminum consistent with the exterior building design.
b. Provide fixed wall louvers that are impact resistant, and designed to resist ASCE 7-10 for 150 mph wind loading.
c. Wall louvers shall not retain water, and prevent water intrusion into the building.
4. Identifying Devices - Signs
a. Identifying signage shall comply with FBC, FFPC, and District Guideline Specifications.

b. Dedication Plaque.
   1) New schools and additions shall have a 18" x 24" cast aluminum or bronze plaque located near the main administration entrance or appropriate addition entry, with the names of the School Board Members and the Superintendent of Schools in office on the date the construction contract was awarded, indicating the year the construction contract was awarded, and the name of the contractor and architect of record.
c. School Name.
   1) Provide 15" to 24" high (dependent upon size of building) anodized or brushed aluminum letters with the school name and 12" high address numbers located on elevation of the facility legible from the street.
      a) Provide Helvetica Medium style font and height for School District approval.
d. Marquee Sign
   1) Provide for a marquee LED type sign with the School name and address per District Design Guidelines.
   2) Locate in prominent location along the main street in front of the school site, coordinate exact location with School District's Project Manager.
   3) Sign shall be hard wired for data and electricity.
e. Signage
   1) Accessibility signage, room identification, and life safety signage shall contain raised characters, Braille, and symbols, and be according to FISH, FAC, and FBC.
   2) Raised image interior and exterior signage to include proportions, height, finish, contrast, and locations according to accessibility code.
   3) Confirm building and room, numbering with District's Construction Manager, starting at Schematic Phase and provide on schedules in Construction Documents. Building and room numbers on drawings shall be identical with FISH numbering system.
   4) Room names on signage of any classroom or laboratory shall be limited to CLASSROOM or LABORATORY, remaining spaces shall have names on signage according to FISH.
   5) Identify all doors, exterior and interior with FISH numbers and space names. Buildings shall be numbered individually with two digits followed by the room number with three digits. For Example: 01-101 (first floor). Space numbers above the first floor shall start with the floor number (01-202) followed by an additional two digits.
   6) See School District Guideline Specifications .
   7) Provide information for maximum occupancy signs with Phase Ill (Construction Documents).
f. Evacuation Signage
   1) Provide a floor plan with related graphics and text, for contractor's installation, showing the primary and secondary evacuation routes from each space with an occupant load of 6 or more and not having a door opening directly to the exterior.
   2) The routes of evacuation shall be indicated in contrasting colors and only indicate the evacuation route from the applicable space.
   3) Orient the map so when facing the mounting wall adjacent to the room exit, the "YOU ARE HERE" arrow will point up.
   4) Text and numbers shall read from left to right.
g. Traffic Signage
   1) Provide galvanized steel signage for traffic control and accessible parking spaces, no aluminum components allowed.
   2) Locate signage away from traffic lanes to be clear of passing buses and cars.
   3) Follow FBC, County and FOOT requirements for size, installation heights, and wording.

h. Show the locations, types, sizes, and quantity of identifying devices on construction documents.

5. Lockers
   a. Types of metal lockers are located and specified according to program requirements.
      1) Sizes shall be as specified in the Educational Specifications.
   b. Provide a 4" high concrete curb for curb mounted locker units.
   c. Provide solid metal sloped tops for locker units.
   d. Island lockers may only be used in Gym Locker areas (with the sloped tops).
   e. Lockers shall have a finish that is resistant to heat, impact, and fading and corrosion.
   f. Lockers shall be heavy duty in a variety of colors, and be low maintenance and graffiti resistant.
6. Fire Extinguishers
   a. Locate fire extinguishers as required by applicable codes in corridors, public spaces, instructional spaces and as indicated below.
      1) Corridors and Assembly Spaces: 2N1 0BC FE every 75' or 3000 sq. ft. wall mounted in semi recessed cabinet. In corridors and public/assembly spaces, provide semi- recessed or fully recessed cabinets with tempered glass panel doors.
      2) Mechanical and Electrical Rooms: 5# CO2 wall mounted FE on bracket located at maximum of 48" AFF immediately inside access door(s).
      3) Cafeteria Kitchen: Class K Type, 6 liter capacity FE within 30' of the hazard (cooking equipment) wall mounted maximum 48" AFF, and one 2NBC FE located every 75' or 3000 sq. ft .mounted in semi recessed cabinet.
      4) Generator Room: One 5# CO2 wall mounted FE on bracket located at maximum 48" AFF.
      5) Culinary Arts Class: One 40BC FE located within 15' of the hazard (cooking equipment) and one 2NBC FE located every 75' and per 3000 sq. ft. mounted in semi recessed cabinet.
      6) Home Economics Lab: 2N1 0BC FE within 15' of the residential stove and per 3000 sq. ft. mounted on bracket maximum 48" AFF.
      7) Flammable Storage Room: 4N60BC FE wall mounted on bracket 48" AFF.
      8) Other vocational shop areas: One 4N60BC FE per 3000 sq. ft. wall mounted on brackets maximum 48" AFF.
      9) Extinguisher cabinets in fire rated walls shall be fire rated.
      10) Mount at heights to comply with all codes, including accessibility codes.
      11) Electronic lab areas: One 2A10BC per 3000 sq. ft. wall mounted at maximum 48" AFF
   b. Provide fire blankets in laboratories and shops.
7. Walkway Canopies
   a. Provide extruded anodized aluminum canopies at exterior walkways connecting student occupied, administration buildings, and accessible walks from passenger loading/drop- off zones.
   b. Metal walkway covers or canopies shall comply with the following;
      1) Connect downspouts to a drainage system.
      2) Extend the roof covering 12" beyond each side of walkway or required walkway width to provide protection from rain.
      3) Provide a straight slab edge at covered walkways at least 6" beyond column face.
      4) Protect column at all vehicle driveways by placing the raised curb 24" from the column.
      5) Florida professional engineer shall design walkway cover systems to withstand wind velocities per ASCE 7-10 for project location.

6) Include lighting in the canopy system; see electrical criteria for light levels.

8. Metal Shelving (Utility Storage)
   a. Metal shelving should only be used in Custodial, Flammable, Building Receiving Areas, Industrial and Building Trade Storage areas. Shelving shall have clip-type adjustable shelving of modular unit construction on individual bolted frame assemblies. Other program storage spaces shall have built in wood shelving.
   b. Attach fixed shelving units securely to walls, if freestanding to floors.
   c. Provide blocking in walls as necessary.
9. Toilet Room Accessories
   a. Toilet accessory component mounting heights shall comply with 2012 Florida Accessibility Code for Building Construction .
   b. Provide receptacles per District Guideline Specifications.
      1) Provide sanitary napkin receptacles in single female student or group toilet stalls for 5th grade and above, and in female staff toilet rooms.
      2) Sanitary napkin dispensers are not required.
   c. Provide stainless steel grab bars with peened surfaces and flanges for exposed mounting at accessible toilets.
      1) Grab bars and installation of grab bars shall comply with applicable accessibility requirements.
      2) Provide vandal resistant fasteners and backing in the partition or wall for sufficient anchoring to resist a 250-pound force applied from any direction.
   d. Mirrors
      1) Mirrors shall be polished stainless steel surfaces, in student toilet and shower rooms.
      2) Provide concealed theft proof mountings, proper anchoring, and wall backing according to manufacturer's requirements.
      3) Install mirrors at heights and sizes to comply with accessibility requirements.
      4) Mirrors in Staff Toilet Rooms, Dressing Rooms associated with Auditoriums, and Dance Labs may be of tempered.
   e. Provide rod and heavy-duty white vinyl shower curtains with exposed fasteners in showers in private shower rooms, i.e. clinic or coaches office restrooms.
      1) In locker room group showers, use phenolic resin partitions where possible to create visual baffles to reduce the need for curtains.
   f. Provide stainless steel bookshelf in group student toilets at maximum of 36" AFF.

N. EQUIPMENT
   1. Appliances
      a. Provide appliances for each grade level as listed in APPENDIX C and Educational Specifications.
      b. Provide shop drawings indicating location, type, manufacturers' name, model number, warranty, and installation instructions.
      c. Appliances shall conform to FBC, and accessibility requirements.
   2. Athletic Equipment
      a. Provide appropriate athletic equipment in areas per Education Specifications.
      b. Provide shop drawings indicating location, type, manufacturers' name, model number, warranty, and installation instructions.
   3. Gymnasium Dividers
      a. Provide electrically operated roll-up type gymnasium dividers (See District Guideline Specifications).
      b. Curtain shall have the following characteristics.
         1) Bottom 12' shall be an opaque solid vinyl coated polyester fabric.

2) Upper portion shall be vinyl coated polyester mesh.
3) Curtain shall have a self-extinguishing (UL) fire rating.
4) Curtain shall be resistant to rot, mildew, and ultraviolet light.

0 . FURNISHING

1. Auditorium Seating
   a. When Educational Specification specifies an Auditorium, provide the required number of seats.
   b. Seating layout shall comply with FBC and 2012 FAC requirements.
      1) Layout should provide optimize sight lines.
      2) Disperse accessible seating as evenly as possible.
   c. Provide upholstered seating with back and retractable seat cushions.
      1) Provide folding table arm on every third seat in all rows.
      2) Fabric shall be durable, easy maintenance, and have Class A ASTM E84 rating.
      3) Exposed metal parts shall have a smooth, durable, and cleanable finish.
      4) Provide for highly visible and tamper resistant seat and row numbering system.
      5) Provide certification that seats is designed and built:
         a) To withstand 600-pound static load, laterally disturbed 3" from the leading edge.
         b) To the 300,000 cycle ASTM F851-3 oscillation test.
2. Telescoping Bleachers
   a. Provide telescoping bleachers in gymnasiums, with the seating capacity per Education Specs.
   b. Provide electrically operated bleachers with multi-tier rows of seat, deck and risers on interconnected retractable supportive understructure, wall attached.
   c. Bleachers and installation shall comply with the FBC and 2012 FAC. Provide number of wheel chair seating spaces as required.

P. SPECIAL CONSTRUCTION

1. High School Stadiums
   a. Provide rubberized 8-lane track to include the field and jumping event areas per District's Guideline Specifications.
   b. Home-side elevated bleacher seating area, 2000-seat capacity and visitor side 1000- seat capacity.
      1) Galvanized steel or precast concrete structure with aluminum treads, riser, and bench type seating.
      2) Design structural system to handle gravity and up-lift loads without a concrete slab under the entire bleacher area.
      3) Design structure in compliance with structural requirements of the FBC and ASCE 7- 10 for wind loading per project location and FBC Chapter 16. Use geotechnical report information for designing foundations.
         a) Live Load: 100 PSF of gross horizontal area.
         b) Perpendicular Sway Load: 1O PLF of seat plank.
         c) Lateral Sway Load: 24 PLF of seat plank.
         d) Wind Load: Per ASCE 7-10.
         e) Live Load for Seat and Tread Planks: 120 PLF.
         f) Handrail and Guardrail loads
         g) Concentrated loads: 200 Lb. Applied at any point in any direction.
         h) Uniform Loads: 50 PLF horizontally and 100 PLF vertically.
      4) Life safety, exiting, accessibility requirements per the FBC and FFPC.
         a) Provide guardrail system with chain link fencing.

b) Provide concrete walkways from all exits.
c) Provide minimum four exit ramps from Home side bleachers.
d) Provide two 11' wide vomitories near the center of the bleacher width exiting to the rear of the bleacher consisting of a set of stairs or ramps in each.
f) Either provide two ramps equally spaced along the front of the bleachers or at exit from vomitories.
g) All locations in bleachers shall be less than 200' from the end of exit (stair or ramp end).
h) Provide for wheelchair spaces with companion seats per 2012 FAC.
i) Provide minimum of three exit ramps in Visitor side bleachers.

5) Provide non-combustible 9'-8" x 52'-0" four section modular press box, with a passenger elevator and toilets for staff and press use. Toilets may be at base of Press box location.

a) Design roof with roof hatch access for staff and press use with 42" railing.

6) Portable Exterior Bleachers
a) Provide non-combustible portable exterior bleachers in areas indicated in numbers required by the Educational Specification.
b) Design bleacher to meet the requirement of FBC, FFPC, and ASCE 7-10 for wind loading at project location.
c) Each bleacher section shall be 15' long with 5 rows and have a maximum seating capacity of 50 at 18" per seat.
d) Provide for anchorage of the bleachers to meet project location wind load requirements.
f) Provide guardrail system with chain link fence.
g) Provide concrete slab for access and capable of accommodating a minimum of two wheelchair spaces per bleacher section. (2 spaces minimum, if bleached capacity is less than 50).

Q. CONVEYING SYSTEMS
1. General
a. Regulatory requirements for passenger elevators.
1) Florida Building Code.
2) Florida Fire Prevention Code.
3) Bureau of Elevators of the Department of Business Regulation according to Chapter 399 of the Florida Statutes.
4) National Electrical Code.
5) Components, accessories, fabricated parts, and structure requirements shall comply with ANSI/ASME A17.1-2013 and ANSI A117.1-2009.

2. Passenger Elevators
a. Elevators in schools are not for general use, they are primarily for persons with disabilities, furniture and equipment transport, and custodial use.
b. Locate elevator for multiple story schools in a location that can service multiple buildings, if possible.
c. Design school elevators with the following.
1) No corridor push-button switches.
2) Provide for District's electronic security swipe card system.
3) Provide vandal-resistant push-button switches at cab interior.
4) Fire call key switch.
5) Emergency phone.

6) Elevator speed shall be 75 ft./minute for two story buildings and 125 ft./min for three or more floors.

d. Elevator pits to provide a dry area and include the following:
   1) Sump pit with a metal cover with moisture detection system.
   2) Metal ladder, if pit is deeper than 3'-0".
   3) Two moisture-proof light fixtures per pit.
   4) One grounded duplex receptacle.
   5) No PVC or plastic pipes.

e. Provide a vandal-proof emergency line-powered speakerphone inside the cab to comply with applicable codes and standards.

f. Provide a 6" radius elevator alarm bell with weatherproof mounting at building exterior with an "Elevator Emergency" sign.
   1) Connect the bell to emergency power in the elevator machine room.

g. Capacity
   1) Provide 3500-pound capacity hydraulic elevator large enough to accommodate a gurney.

h. Cab Interior
   1) Comply with FAC for cab size and mounting height of controls.
   2) Elevator cabs shall have durable, and low maintenance interior finishes.

i. Elevator Machine Rooms:
   1) Locate next to or near the elevator hoist way.
   2) Provide at least 7'-0" clear headroom.
   3) Provide separate mini split air conditioning system.
   4) Maintain 1hr. fire rated enclosure.
   5) Do not place pipes, ducts and conduits not required for elevator operation in the elevator machine room.

3. Wheelchair Lifts
   a. Elevator lifts are considered a secondary option to ramps and are discouraged. Provide design utilizing ramps, if possible, for accessibility in locations required.

END OF SECTION

APPENDIX A
SOUND RATINGS

Space	Adjacent Space	Minimum **STC Rating**
Classrooms, Laboratories, Offices, Teacher Planning, Resource rooms, Media Center. Skills Labs, or Conference room. Doors may be less than 50 to avoid sound gasketing and automatic door bottoms.	Classrooms, Laboratories, Offices, Teacher Planning, Resource rooms, Media Center. Skill labs, or Conference room.	50
Classrooms, Laboratories, Offices, Teacher Planning, Resource rooms, Media Center. Skills Labs, or Conference rooms. Doors may be less than 60 to avoid sound gasketing and automatic door bottoms.	Mech. equip spaces	60
Classrooms, Laboratories, Offices, Teacher Planning, Resource rooms, Media Center. Skills Labs, or Conference rooms.	TV Production Spaces	50
Stairs, Corridors. Doors may be less than 52 to avoid sound gasketing and automatic door bottoms.	Classrooms, Laboratories, Offices, Teacher Planning, Resource rooms, Media Center. Skill Labs, or Conference room.	52
Mech. equip spaces. Doors may be less than 55 to avoid sound gasketing and automatic door bottoms.	Stairs, Corridors	55
Kitchens, prep, serving and receiving areas. Doors may be less than 47 to avoid sound gasketing and automatic door bottoms.	Classrooms, Laboratories, Offices, Teacher Planning, Resource rooms, Media Center. Skills Labs, or Conference room.	47
Gymnasium/PE Areas. Doors may be less than 50 to avoid sound gasketing and automatic door bottoms.	Classrooms, Laboratories, Offices, Teacher Planning, Resource rooms, Media Center. Skills Labs, or Conference rooms.	50
Dining Areas. Doors may be less than 50 to avoid sound gasketing and automatic door bottoms.	Classrooms, Laboratories, Offices, Teacher Planning, Resource rooms, Media Center. Skills Labs, or Conference room.	50
Music Rooms.	Any other space	60
Practice Rooms.	Any other space	60
Band Rooms.	Any other space	60
Choir/Orchestra.	Any other space	60
Auditorium.	Any other space	60
Toilets. Doors may be less than 53 to avoid sound gasketing and automatic door bottoms.	Classrooms, Labs, Offices, Teacher Planning, Resource rooms, Media Center. Skills Labs, or Conference rooms.	53

APPENDIX B
MAXIMUM MOUNTING HEIGHTS
(In Inches)

	Elementary			Secondary
ITEM	Pre-Kindergarten	Grades K-3	Grades 4-5	Grades 6-12
Cabinet display (bottom)	29	29	34	39
Marker Board (bottom & chalk rail)	24	24	28	30
Counter classroom work (standing)	27	27	34	34
Lavatory and sink	31	31	34	34
Computer Countertops	27	27	29	29
Mirror lower edge (Maximum height)	34	34	34	40
Pencil sharpener	31	31	36	42
Shelf hat and books	46	46	53	60
Soap dispenser	31	31	36	42
Tack board (bottom)	25	25	29	34
Towel dispenser	31	31	36	42
Water Closet (seat)	15	15	17	17
Toilet Paper Dispenser	17	17	19	19
Flush Controls	36	36	40	40
Grab Bars	25	25	33	33
Urinals	N/A	N/A	N/A	17 (Rim)
Flush Control	N/A	N/A	N/A	44
Drinking Fountain (Spout Ht.)	30	30	36	36

* Accessible spaces shall comply with 2012 Florida Accessibility Code requirements.

CIVIL DESIGN GUIDELINES

PART1 GENERAL

A. The Design Professional shall use this document in conjunction with other Design Guidelines, District Educational Specifications, District Master Specifications, and the contract documents to develop the project documents.
B. The Design Professional shall coordinate all aspects of the Civil documents with documents prepared by other professionals to produce a consistent design document wherein all connecting, interrelated features match between disciplines.
C. Design Professional shall follow the requirements of the School District Staff including Transportation, Instructional Technology, Food Service, Maintenance, Planning and Design Departments.
D. The Design Professional is encouraged to use energy conserving and environmentally friendly building products and design practices when economically feasible and practical, such as recycled building products, grey irrigation water if available and drought resistant landscaping.
E. Goals:
    1. Ensure provision of safe, convenient, legal access to and circulation within the campus for vehicular, bicycle, physically disabled, and pedestrian traffic.
    2. Provide adequate infrastructure improvements in accord with accepted standards for design and construction, and ensure associated rights and obligations exist for the use and maintenance of said improvements.
F. This division contains requirements for the following elements:
    1. Site Surveys.
    2. Geotechnical Reports.
    3. Site Access .
    4. Stormwater Management - Elevation Criteria for Flood Protection
    5. Pavement Area and Road Improvements.
    6. Concrete Curbs and Sidewalks .
    7. Play and Sports Fields.
    8. Potable Water Distribution System.
    9. Fire Protection.
    10. Sanitary Sewer System.
    11. Lift Stations.
    12. Fences and Barriers
    13. Signs and Pavement Markings
    14. Landscape requirements and Irrigation Systems
    15. Natural and Liquid-Petroleum (LP) Gas Systems
G. Appendix Lists for landscaping and playfield requirements.
H. Site design shall incorporate the latest design requirements or code requirements of the following effective from date of Design Contract:
    1. Florida Building Codes (FBC)
    2. Florida Fire Prevention Code.
        a. FAC Chapter 69A-58, Fire Safety in Educational Facilities (existing facilities)
        b. FAC Chapter 69A-60, The Florida Fire Prevention Code
        c. The National Fire Codes (NFC).

3. Florida Department of Transportation (FOOT).
    a. Standards for Design, Construction, Maintenance and Utility Operation on the State Highway System.
    b. Manual of Uniform Minimum Standards for Design, Construction and Maintenance for Streets and Highways
    c. Standard Specifications for Road and Bridge Construction.
4. Florida Department of Environmental Protection Resources (DEP).Martin County Water Utilities Department Minimum Engineering and Construction Standards - Potable Water, Reclaimed Water, and Wastewater Systems", edition in use at time of design.
5. "National Federation Courts and Field Diagram Guide".
6. Martin County Health Department.
7. Martin County Traffic Engineering Standards
8. South Florida Water Management District (SFWMD):
9. United States Department of Transportation (USDOT), Federal Highway Administration, (FHWA), Manual on Uniform Traffic Control Devices (MUTCD).

    If wetland mitigation and/or dredging and fill are required, provide a copy of the Joint Permit (WMD/DEP/ACOE) and a copy of the appropriate Nationwide Permit, including general and regional conditions (if required) as issued by the US Army Corps of Engineers.

PART 2 CRITERIA

A. SITE SURVEYS
1. Signed and sealed copy and one CD copy of boundary and topographic surveys shall be provided to design consultants.
2. Provide survey information on civil engineering plans -- boundaries (bearing and distance), existing grades, final grades, benchmark, horizontal control points, location of buildings, existing utilities, wells, and easements of record. Identify adjacent landowners and land use.
3. Show or note any municipal well fields, aviation air space, or other items that may impact construction.
4. Provide tree surveys to include:
    a. Scientific and common tree names (4" or greater unless vegetation on site is so dense that cost of tree location is prohibitive in which case tree grouping shall be indicated as bubble diagrams.
    b. Grade elevation at base.
    c. Trunk diameter at 4'-6" above existing grade.
    d. Recommendation for retainage, relocation, or removals.

B. GEOTECHNICAL REPORT
1. The consulting Civil Engineer shall incorporate into the project specifications a copy of the Geotechnical Engineer's report, supplied by SBMC.
    a. The report contains standard penetration tests, auger borings, a complete analysis of the borings, recommendations to presumptive soil bearing capacity, structural recommendations for pavement sections, and percolation tests -- either the "Open-Hole" test or the "Falling Head Open-Hole" test as described in the SFWMD Manual.
    b. Construct the building pads in accordance with the recommendations of the soils engineer. However, District policy requires that each 12" lift (loose measure) be compacted to 98% of maximum dry density as determined by modified proctor (AASHTO T-180) methods.
    c. The Testing Laboratory shall take a minimum of one compaction test every 5,000 SF.

C. SITE ACCESS

1. Site Circulation
   a. Site access shall consist of a primary road and secondary access for fire department access.
   b. Provide separate bus driveways and parent drop-off area.
   c. Build roads with a crowned centerline, or graded to one side, "Florida Greenbook" IV (D) (6a).
      1) Design roads, parking areas, and other pavement to drain to a median or an edge. (Not to the center of the road/pavement where people would walk or drive.)
   d. Minimum outside turning radii and unobstructed one-way travel width:
      1) School Buses 60 Feet / 24 Feet
         a) 60 feet is the minimum centerline radius for two way traffic)
      2) Passenger Vehicles 26 Feet/ 12 Feet
      3) Fire trucks (pumper type) 50 Feet / 20 Feet
      4) Garbage Trucks 34 Feet/ 15 Feet
         a) The service organization providing trash removal must approve the dumpster and garbage truck arrangements for each school and may have more restrictive criteria.
   e. Parent drop-off area shall accommodate cars and small vans and meet emergency access criteria as needed at individual school sites.
   f. Provide constant width of traffic lanes.

   1) Turning areas may require wider sections.

   g. Recommend off site turn lanes, sidewalks, traffic lights, crosswalks and signs even if not in the school construction contract. Provide copies of proposed road improvements.
   h. Align driveways with existing roads where possible.
   i. Provide accessible passenger ramps/loading zones in the bus and parent drop-off areas.
      1) Locate passenger loading zones beneath/adjacent to covered walkways.
      2) Refer to FBC Figure 11-10 for accessible loading zone access aisle minimum dimensions.
      3) Provide curb behind loading zone to retain sod/topsoil and divert storm water.

2. Emergency Access
   a. Provide emergency vehicle access to all areas of the site, with double gates as required.
      1) Provide a 20' wide emergency access grass driveway around unaccessible portions of buildings.
      2) Design access driveway to support a 32-ton fire truck.
      3) Local fire authority will approve location of the access road and may have additional requirements.

3. Parking
   a. Provide parking spaces as required by FBC Para. 423.10.2.8 and per District Educational Specifications provided for each school.
      1) Follow fire department access criteria presented in NFPA Chapter 1141.
      2) Parking should be 90° when possible with two-way traffic.
      3) Stall dimensions shall be a minimum 9'-0" wide x 19'-0" long for 90° parking. No angled parking is permitted.
      4) Accessible parking number and size shall conform to FBC Para..11-4.1.2(5).
   b. Provide accessible parking spaces with direct access to Main Office.
   c. Provide accessible parking spaces in each separate parking area.
   d. Provide tabulation of proposed and required parking spaces.

4. Sidewalks
    a. Provide sidewalks, with the following features:
        1) Minimum width of 6' dependent upon number of walk-in and bike riding students.
        2) Minimum separation from public roadways shall be 5'.
            a) Where less than 5' of separation is available, erect a 48" high fence between the roadway and the path.
        3) Minimum inside curve radius shall be 5'.
        4) Provide 1O' minimum walkway width at Elementary School Bus Pick/Up Drop/Off walkways; 12' minimum walkway width at Middle School Bus Pick/Up Drop/Off walkways, and 16' walkway width at High School Bus Pick/Up Drop/Off walkways.
        5) Review access criteria with the local municipality for appropriate construction of off-site improvements to maintain safe school access for cyclists.

D. STORMWATER MANAGEMENT- FLOOD CRITERIA
1. Outside Agencies
    a. SFWMD shall approve the storm water management system and finished floor elevation.
        1) Submit SFWMD permit and calculations.
2. Grade and Finish Floor Elevations
    a. Minimum elevations of finished on-site grading and building lowest finished floor elevations shall comply with the highest elevation requirements of:
        1) SFWMD three-day, one hundred year storm event.
        2) Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM).
        3) A minimum of 12" above adjacent roads and perimeter roads.
        4) Not less than the floor elevations of the building(s) remaining on an existing campus.
    b. Minimum grade elevation requirements:
        1) Set parking lot elevations at the ten-year, one-day storm event.
        2) Set roadway crown elevations at the ten -year, one-day storm event.
        3) Set playing fields elevations for elementary schools at the five-year, one-day storm event.
        4) Set playing fields for middle schools and high schools at the ten-year, one-day storm event.
3. Paving Grading and Drainage
    a. Paving, grading and drainage plans shall indicate the size, location, and material of the storm sewer system, the size and location of all drainage structures, of all retention/detention areas, and of the outfall structure(s).
    b. Provide an outfall for the drainage system to a retention pond, city catch basin, etc.
        1) Exfiltration trenches without an outfall to a retention pond, canal, city storm sewer, etc. are not recommended.
        2) Provide a control structure with a weir.
    c. Interconnect all drainage retention ponds.
    d. Provide catch basin details:
        1) May use yard drains in small grass areas.
        2) Provide traffic covers as required, and label all manhole covers. Use round manhole covers for storm and sewer manholes in pavement.
        3) Locate catch basins at least 1O' away from sidewalks.
        4) Provide sump and drain hole in the bottom of catch basins.
    e. Drainage pipe will be concrete, high-density polyethylene (HOPE) or polyvinyl chloride (PVC).

1) HOPE pipe shall not be adjacent to tilt wall construction.
2) Specify concrete pipe below pavement and at locations subject to large construction wheel loads.

f. Provide perimeter berms to prevent storm water drainage onto adjacent property.
g. Provide headwall details.
h. Coordinate the size and location of the roof drains with the architect and direct the roof drains to the storm drainage system.
i. Connect the HVAC system condensate pipes with backflow valves to the drainage system.

4. Well field protection requirements:
   a. Comply with requirements of Martin County Water Utilities Department Minimum Engineering and Construction Standards - Potable Water, Reclaimed Water, and Wastewater Systems", edition in use at time of design.

E. PAVEMENT AREA AND ROAD IMPROVEMENTS.
1. Asphalt concrete paving and base shall comply with the District Guideline Specifications.
2. Provide sleeves under roads and parking areas for irrigation pipes and other utilities and cables.
   a. Sleeve materials shall be:
      1) American Water Works Association (AWWA) Standard C900/C905 PVC Pressure Pipe.
      2) Other sleeve material shall be evaluated via the submittal review process.
   b. Support carrier pipe or other cased materials within the casing by manufactured or locally fabricated supports.
      1) Design the supports to enable subsequent removal from the casing for repair or replacement.
3. Pavement markings
   a. Show all parking lot lines, stop bars, crosswalks (at bus loop, parent drop off, entrances, exits), direction arrows, traffic lane lines, accessibility striping and symbols, fire lane striping, and student warning line.
      1) Student warning line is a continuous 4" wide yellow line painted on the sidewalk 24" behind the face of the curb for the distance the bus loop and parent drop off area interface with the building and or cover walkway or minimum of 100'.
      2) Fire lanes do not need to be striped. Curb in fire lane shall be painted yellow with a 4" yellow line 42" from the face of the curb, with the alternating words "NO PARKING - FIRE LANE" 60' o.c. (12" high letters) for the distance the bus loop and parent drop off area interface with the building and or cover walkway or minimum of 100'.
      3) Fire lanes shall be marked with freestanding metal signs reading "NO PARKING FIRE LANE". These signs shall be 12" x 18" with a white background and red letters. The signs shall be placed seven feet above grade as measured to the bottom of the sign at 60 foot intervals.
4. All signing and traffic marking shall conform to the FOOT Design Manual.

F. CONCRETE CURBS AND SIDEWALKS
1. Sidewalks and Curbs
   a. Sidewalks and curbs shall be concrete.
      1) Exception: Asphalt maybe used for walkways to temporary relocatable (portables) sites.
   b. Provide curbs and raised sidewalk to separate pedestrians and vehicles.

c. Provide details for curb, accessibility curb cutouts, sidewalk ramps, aluminum walkway covers, striping (including stop bars) and sidewalk (dummy joint spacing, finish, expansion joints, etc).
d. Sidewalk curbs at pick-up/drop-off areas shall be 24" beyond covered walkway columns. Canopies may extend over pick-up/drop-off areas if they provide minimum 11'-6" clearance to pavement.
e. Extruded concrete curbs on top of asphalt are not permitted.
f. Provide 6' wide minimum sidewalks.
1) Show expansion joints 48' o.c., at changes in direction, and against existing buildings.
g. Provide accessible curb cutouts at crosswalks (including perimeter sidewalk).
1) Bus drop-off area, if not flush with travel surface shall have one accessible curb cutout per 100' of bus drop-off length with minimum of two..
2) Accessible parking, parent drop-off, and main entrance.

2. Wheel Stops
a. Wheel stops may be recycled concrete or plastic.
b. Show details of the anchoring of the wheel stops.

3. Dumpster Pad and Enclosure
a. Maxiumum size dumpsters is 8 cu. yds.(Two required minimum) pad is 12' deep x 20' wide with curb stop at back of dumpster enclosure. See Educational Specifications and Owner's Project Manager for additional recycling requirements.
b. Provide concrete dumpster pad with a 1O' approach apron.
c. Locate dumpster pad near Food Service entrance with direct approach for trucks.
d. Coordinate with Solid Waste Service Provider.
e. Floor drains are required for compactors.
f. Provide 6' high enclosure to visually screen the dumpster, with 2 gates full width of opening.

G. PLAY AND SPORTS FIELDS
1. Provide underground drainage system piping for play and sports fields, and set at elevations coordinated with Architect.
2. See Architectural Design Criteria and Appendix - Athletic Field Dimensions for other requirements of play and sports fields.

H. WATER UTILITY SYSTEMS
1. General Requirements
a. Section includes criteria for design of systems that distribute potable water, collect and transmit wastewater, and provide fire service.
b. Potable water and wastewater systems shall satisfy criteria used by Florida Health Department, and Florida Department of Environmental Protection in their construction permitting process.
1) Potable water and wastewater systems shall comply with Florida Building Code, Plumbing.
c. Design off-site potable water and wastewater system components per criteria used by off-site system providor.
d. Design on-site potable water and wastewater system components, owned and maintained by SBMC per Martin County Water Utilities Department Minimum Engineering and Construction Standards - Potable Water, Reclaimed Water, and Wastewater Systems", edition in use at time of design.

e. Design piping systems using polyvinyl chloride (PVC) and ductile iron (DI) pipes, fittings and appurtenances.
    1) More specific detail is in District's Guideline Specifications, referenced design standards and in the specific utility sub-sections.
f. Provide easements for public systems constructed on District property.
g. Fence or otherwise protect above ground features and keep at least 10' away from playing areas and sports field.
    1) Separation requirement includes valve boxes and cleanouts.
h. The civil drawings and plumbing drawings shall agree regarding points of entry for pipes extended to buildings and points of connection to public facilities.
i. Note size, material, and location for piped utilities and their appurtenances on design drawings.
j. Provide valve boxes for underground valve installations.
k. Indicate limits of removal or abandonment for existing utility systems.

2. Potable Water System
    a. Design operating pressure shall be 150 psig.
    b. Potable water service shall be separate from the fire service.
        1) Provide separate connections to public water system or similar protective measures.
        2) Water main connection to the source of supply shall always be upstream from backflow prevention device used to isolate fire service main.
    c. Loop potable water service main within campus when there are more than three buildings having separate service lines.
        1) Each building shall have separate service shut-off from main domestic service.
        2) Provide isolation valves at each building service line approximately 5' from building wall.
    d. Maximum water meter size shall be 3".
    e. Minimum water main size at meter and backflow preventor shall be 4".
    f. Provide dual, 4" diameter, parallel, reduced pressure backflow preventor assemblies to isolate District potable water main from public water system.
        1) Backflow preventor assembly shall be equipped with isolation valves on inlet and outlet side.
    g. Provide recessed hose bibs with tamperproof anti-siphon device and potable water fountains at sports fields.
    h. Provide recessed hose bibs with tamperproof anti-siphon device near dumpster location.
        1) Provide bollards or other protective measures as necessary to protect hose bib.

3. Fire Service System
    a. Design operating pressure shall be 200 psig.
    b. Fire service shall be separate from potable water service, see 2.b, above.
    c. Fire hydrants shall be dry barrel style and equipped with barrel drain.
    d. Fire hydrant branches shall be ductile iron from tee serving the branch to the hydrant, with isolation valves installed on each hydrant branch.
        1) Paint fire hydrants owned by MCSD bright red.
        2) Fire hydrants owned by local utility shall be painted to comply with the requirements of the authority having jurisdiction.
    e. Fire mains feeding individual building fire suppression systems shall be entirely ductile iron from the tee serving the individual feed to building connection point.
    f. For single buildings on campus, provide a reduced pressure principle backflow prevention assembly n the fire main and a fire department connection.

g. For a multi-building campus, in the fire main provide a reduced pressure principle backflow prevention assembly and provide to each building or group of buildings a fire service line that contains a post indicator valve, check valve, and a fire department connection.
    1) In buildings with fire pumps, the fire department connection will connect to the discharge side of the pump.
h. Post indicator valves, fire department connections, and fire hydrants shall be a minimum of 40' from the nearest building.
i. All points on each building shall be within 300' of a fire hydrant.
j. Provide a fire hydrant within 150' of fire department connection.
k. All existing system flow and pressure tests, and new system design calculations, shall comply with the National Fire Protection Association Chapter 24, edition in use at time of design.
l. The local fire authority having jurisdiction shall approve all fire service features.

4. Wastewater System
    a. The design operating pressure for force mains shall be 150 psig.
    b. The minimum standard dimension ratio for PVC gravity sewer shall be 35.
    c. Locate pre-cast concrete manholes at the beginning and end of each sanitary sewer run, all gravity sewer deflection points, and at maximum intervals of 400' on straight sewer sections.
    d. Connect individual building wastewater lines to gravity sewer laterals with service tees.
        1) Connect individual building wastewater service lines to manholes with proper flow channels at the manhole invert.
    e. Connect wastewater service lines from cafeterias to concrete grease interceptors that meet the specific requirements in FBC, Plumbing, Para.1003.1-1003.5.
        1) The maximum number of interceptors shall be three at elementary and middle schools, and four at high schools.
            a) [Number of students eating meals x gallons of waste per day (5) x load factor (0.75)]/1250.
                (1) Number students X % Eating Meals Elementary schools 850 100
                Middle schools 1350 67
                High schools 2000 50
        2) Design Grease interceptor to resist floatation when empty.
        3) Design to meet H-20 truck loading if located driveway or parking lot.
    f. Provide an oil/water separator for vehicle maintenance areas or wash down areas, connect to wastewater system.
    g. Keep all cleanouts at least 10' from any building entrance.
    h. Lift Stations
        1) Locate lift stations adjacent to public streets.
        2) Municipal Lift Stations, if conditions require, provide a lift station and force main.
            a) Submit details of the lift station and force main in accordance with the details and specifications of the municipality having jurisdiction, along with evidence of their acceptance of the system design.
        3) SSMC Lift Stations
            a) Do not specify telemetry systems for District owned lift stations.
            b) Comply with the Martin County Water Utilities Department Minimum Engineering and Construction Standards.

c) Show electrical power to the lift station, with a tie into the school emergency power system, emergency power receptacles are not required.
d) Water pipe to the lift station will include a backflow preventor.

i. Contact the Martin County Health Department regarding well construction permits and any utilities construction in well field protection area zones.

I. FENCES

1. Provide 6' high fences around property perimeter and enclose open ends between building wings to create inner security perimeter, athletic facilities, bike racks, lift stations, irrigation pumps and wells, FP&L transformer(s) and wet retention ponds (on site or off site). Large ground mounted mechanical equipment (chillers, cooling towers, pumps and controls) and dumpsters shall be enclosed with sound absorbing walls high enough to visually mask equipment and block sound transmission to adjacent properties. Provide 4' high fences at kindergarten play area and split system HVAC condensers and electrical disconnects and transformer equipment installations.
2. All fencing shall prevent the passage of a 4' sphere, and fencing around play areas for children under the age of 5 years, shall be less than 3.5".
3. Provide double gates in fences around retention ponds for service access.
4. Provide fences or chains for the water meter and backflow preventers.
5. Fence fabric shall be selvaged knuckled top and bottom.
6. Use vinyl chain link fencing (9ga.), unless directed otherwise by Owner's Project Manager.
   a. Property perimeters fronting street right-of-ways
   b. Bicycle rack enclosures
   c. Interior courts (adjacent to buildings)
   d. Kindergarten play areas
7. Some fencing locations may require decorative fencing such as masonry post and aluminum or steel picket type fencing. The Facilities Department will provide design and specification requirements .
8. Existing fencing will be evaluated if it is to remain, or be replaced. If it remains, then the new fence should match the existing.
9. Provide swing gates.
   a. Minimum vehicle gate clearance is two feet wider than the traveled way.
   b. Pedestrian gates shall be equipped with panic hardware and comply with exiting requirements.
10. DO NOT use barbed or razor wire fencing.
11. DO NOT place ITV poles, manholes, catch basins, etc. in the kindergarten play areas.

J. SIGNS

1. Provide signs that convey facility specific information.
   a. These signs shall include as a minimum; a school marquee, building names (e.g. - Gymnasium, Cafeteria, etc), dedication plaque, principal parking only, assistant principal parking only, and other signs needed to direct the general public to administrative locations (e.g. - main office, student services office, etc.).
2. Provide signs of a regulatory nature in accordance with applicable codes and standards (e.g. - FOOT which would include yield, stop, etc; NFPA, ADA, etc.).
3. The Design Professional shall develop plans and specifications for sign types and locations as part of the final construction plans for permit.

K. LANDSCAPING

1. General Requirements .

a. The Architectural team for new schools or other projects with large or specialized site components shall include a Florida registered Landscape Architect.
b. Develop a comprehensive landscape design providing students protection from the sun and promoting energy conservation and drought resistant planting.
    1) Emphasize the main administration entrance and front facades and coordinate with architectural, civil, mechanical, and electrical work.
    2) Landscaping shall not block or hinder clear observation of buildings and playfields.
c. The landscape design shall provide design grades, coordinated lighting layouts, plazas, walks, drives, service areas, fencing, playfields, site furnishings, planting plans, irrigation plans, relocatable classrooms, and expansion provisions.
d. Landscaping shall not impede any means of egress.

2. Xeriscaping is highly encouraged.
    a. Identification of xeriscape zones on the landscape plan shall include:
        1) Natural Zones - Areas where landscape plantings can live on naturally occurring rainfall.
        2) Low Water Zones - Areas where landscape plantings are "drought tolerant" and can survive, for the most part, with very limited irrigation.
        3) Moderate Water Zones - Areas that require regular irrigation. These landscape areas should be limited to entryways or other special use areas.
    b. Only choose plants suitable for site.
    c. Select landscape materials that will conserve water. Refer to South Florida Water Management bulletin "quick facts on... Xeriscape" for additional guidance on selection of drought tolerant landscape materials. See attached approved plant list.
3. Protection and Transplantation of Existing Trees.
    a. When feasible, preserve existing trees on site. Sidewalks shall be design to minimize conflict or close proximity with existing or new tree locations. Staking hardware removal is responsibility of contractor.
        1) Evaluate, in consultation with District's Construction Manager, existing trees to decide feasibility and desirability of retainage or relocation during Phase 1.
    b. Provide appropriate plans and specifications for tree protection or transplantation.
    c. Tree Protection.
        1) Construction documents shall indicate methods and scheduling for effective tree and plant protection during construction, or indicate how to coordinate protection with contractor.
    d. Tree Transplantation.
        1) Include tree relocation instructions on plans and in specifications.
        2) Specify maintenance methods and who is responsible for transplanted materials until final completion.
4. Earthwork for Landscape Areas.
    a. The Architect shall recommend the number and locations of percolation and soil tests, District's Construction Manager will review the recommendations, finalize the scope of investigations, confirm the scope with the Architect, and then direct the geotechnical engineer to proceed.
    b. Architect shall check surface and subsurface soils before and after fill operations to confirm percolation and compaction levels meet playfield and planting requirements, and make recommendations as necessary.
    c. The Architect shall prepare plans and specifications for slopes, grades and materials in all landscaped areas including sport fields.
    d. Slopes:

1) Establish finish grade at building perimeter at least 6" below adjacent lowest interior finish floor.
    a) From building perimeter, maintain a 1:50 slope for a minimum of 12' and then a slope not to exceed 1:12 to finish grade unless otherwise directed.
2) Sidewalks shall not exceed a slope of 1:20 or cross slopes of 1:50.
    a) From sidewalk edges maintain a 1:50 slope for at least 5' and then a slope not to exceed 1:12 to finish grade unless otherwise directed.
    b) Adjacent grade to receive sod shall be 2" below finish elevation of sidewalk.
3) Finish grade slopes at berms shall not exceed 1:4.

5. Irrigation Systems
    a. The Architect will provide specifications for an automatically controlled irrigation system for head to head coverage of planted areas to comply with high quality local examples of engineering, landscaping practices, and equipment manufacturers' recommendations.
    b. Design irrigation system to conserve water and utilizing grey water if available.
        1) Use rain sensors that stop irrigation during periods of adequate rainfall.
        2) Placement of heads to prevent watering of paved areas and buildings.
        3) Set timers for early morning watering.
    c. Design Professional shall inspect and evaluate the existing well and pump system on renovating existing facilities and make recommendations for the renovation of the well and the pump system.
        1) Irrigation water sources shall utilize a well system.
    d. Locate pumps and controllers in a pump room, mechanical room, or other custodial controlled space within the facility for security.
6. Planting & Related Work
    a. Provide planting buffers and screening such as hedges, fences, walls, earth berms, or other landscaping between school site and adjacent land uses.
        1) Preserve as many of the existing mature trees on existing sites as possible.
            a) Mature trees are trees having a minimum trunk diameter of 6" measured 4'6" from the ground, and a minimum drip-line diameter of 15'.
            b) Clear site of poisonous and toxic plants.
    b. Provide a systematic plan for the removal of invasive non-native plants, including Punk tree (Melaleuca Quinquenervia), Brazilian Pepper (Schinus Terebinthifolius), Australian Pine (Casuarina-equisetifolia), and Cat claw Mimosa (Mimosa Pigra) shall be implemented and none shall be planted, as required by law (See Appendix B for Prohibited Plants).
7. Design & Installation
    a. Design and install trees and landscaping so as not to create blind spots around the perimeter of buildings or on roadways and not provide access to the roof.
        1) Provide road intersection visibility, on or off site by providing a clear sight line at intersections.
        2) Place no large objects, earth berms over two feet high, or vegetation, other than grass or low ground cover in the right-of-way area within a safe distance of the edge of the intersecting roads.
    b. Trees used in courtyards shall be of a species whose mature canopy is less than 50% of the width of the space between buildings.
    c. Scientific names for all plants listed in the appendix come from United States Department of Agriculture, Natural Resources Conservation Service, Plant Data Base web site: http://plants.usda.gov.
        1) See Appendix A "List of Approved Plants" for acceptable plants.
        2) See Appendix B "List of Prohibited Plants" for unacceptable plants.

d. Provide low maintenance varieties of plants.
e. Comply with quarantine requirements of white-fringed beetles and fire ants.
f. Provide warranty periods after Owner's acceptance of:
    1) 90-days for grassed areas.
    2) One-year for trees, shrubs, and ground cover.
    3) Provide tree canopy shade to reduce sun exposure or heat gain at perimeter of play areas. No trees on playgrounds.

L. MISCELLANEOUS
1. Liquid Petroleum Tanks
    a. All LP-storage tanks shall be installed underground.
        a) Provide anchorage to resist floatation.
        b) Provide fencing around area of tank and supply valve.
2. The civil engineer of record is to provide as-built drawings on paving and on water, sewer and drainage systems.
3. Complete "as-built" information relative to location of all lines, service laterals, as well as invert and rim elevations of all manholes, shall be accurately recorded, and the information submitted to the engineer prior to final acceptance of the work.
    a. An independent registered surveyor shall take all elevations and shown them on the as-builts.
4. Termiticide soil treatment as defined in the FBC, is required for slabs or other hard surfaces under enclosed spaces. Do not use Chlordane, Heptachlor, Aldrin, Dursban, Dieldrin, and any chemical detrimental to the water supply.

END OF CIVIL DESIGN GUIDELINES

APPENDIX A - LIST OF ACCEPT ABLE PLANTS

Common Name	Scientific Name
Bald Cypress	Taxodium distichum
Beauty Berry	Callicarpa americana
Black Ironwood	
Blolly	Guapira discolor
Boston Ferns	Nephrolepis exaltata
Coco Plum	Chrysobalanus icaco
Crabwood	Gymnanthes lucida
Crape Myrtle	Laqerstroemia indica
Dahoon Holly	llex cassine
Drawf Schleffera	Schleffera
Fakahatchee Grass	Tripsacum dactyloides
Fiddlewood	Citharexylum fruticosum
FL Strangler Fig	Ficus aurea
Florida Privet	Forestiera seqreqata
Green Button Wood	Conocarpus erectus
Jamaican Caper	Capparis cynophallophora
Jamaican Dogwood	Piscidia piscidia
Juniper	Juniperus
Lancewood	Nectandra coriacea
Liriope	Liriope muscari
Laurel Oak	Quercus laurifolia
Live Oak	Quercus virginiana
Loblolly Bay	Gordonia lasianthus
Mahogany	Swietenia mahoqani
Marlberry	Ardisia esacallonoides.
Mastic	Pistacia lentiscus
Myrsine	Rapanea guianensis
Myrtle of the River	Calyptranthes zuzygium
Necklace Pod	Sophora tomentosa
Palmetto Palm	Serennoa repens
Paradise Tree	Simarouba qlauca
Paurotis Palm	Acoelorrhaphe wrightii
Philodendron	Philodendron
Piqeon Plum	Coccoloba diversifolia
Pond Apple	Annona qlabra
Pond Cypress	Taxodium ascendens
Pop Ash	Fraxinus caroloniana
Randia	Hillebrandia
Red Bay	Persea borbonia
Red Maple	Acer rubrum
Red Mulberry	Morus rubra
Red Stoooer	Euqenia rhombea
Royal Palm	Rovstonea elata
Sabal Palm	Sabal palmetto
Sand Pine	Pinus clausa
Satin Leaf	Chrysophyllum oliviforme
Saw Palmetto	Serenoa repens
Scarlet bush	Hamelia oatens
Sea Grape	Coccoloba uvifera
Shumard Oak	Quercus shumardii buck!. var. shumardii
Silver Button Wood	Conocarpus erectus var sericeus
Simpson Stoppers	Mvrcianthes fraqrans
Slash Pine	Pinus elliottii
Southern Maanolia	Maqnolia arandiflora
Southern Red Cedar	Juniperus siliciola
Spanish Stopper	Foetida
Spicewood	Calvotranthus oallens
Suqarberrv	Celtis laevigata
Swamp Bav	Persea oalustris
Sweet Bav	Laurus nobilis
Sweet Gum	Liquidambar sttvraciflua
Sycamore	Platanus
Thatch Palm	Thrinax sw
Varnish Leaf	Dodonaea visosa
Washington Fan Palm	Washinqtonia robusta
Wax Mvrtle	Mvrica cerifera
White Stopper	Euaenia axillaris
Wild Coffee	Psvchotria
Willow Bustic	
Yauoon Hollv	llex vomitoria

APPENDIX 8 - LIST OF PROHIBITED PLANTS

Common Name	Scientific Name	Plants or Their Parts Know to Cause				County Prohibited
		Dermatology	Gastro	Respiratory	Death	
AQave	AQave	Yes				
Air Potato Vine	Dioscorea Bublifera					Yes
Akee	Blighia sapida					
Allamanda	Allamanda	Yes	Yes			
Anemone	Anemone	Yes	Yes	Yes		
Australian Pine	Casuarina-equisetifolia					Yes
Azalea	Rhododendron				Yes	
Balsam Apple	Echinopepon					
Barbados Nut	Jatropha curcas				Yes	
Belladonna	Atropa				Yes	
Blackeyed Susan or Coneflower	Rudbeckia	Yes				
Boatlily	Rhoeo	Yes				
Brazilian Peooer	Schinus teribinthifolius	Yes		Yes		Yes
Buttercup	Ranunculus	Yes		Yes		
Caladium	Caladium		Yes			
Camphor	Dryobalanops qaertner		Yes			
Carolina Jasmine		Yes			Yes	Yes
Carrotwood	Cupaniopsis anacardiodes					Yes
CastorBean	Ricinus communis	Yes		Yes	Yes	
Cat claw Mimosa	Mimosa pigra					Yes
Chinaberry	Melia azedarach				Yes	
Chinese Tallow	Sapium sebiferum		Yes			Yes
Chrysanthemum	Chrysanthemum coronarium	Yes				
Citrus	Citrus	Yes				
Coontie	Zamia pumila					
Coral Bean	Erythrina flabelliformis					
Crape Myrtle	Lagerstroemia indica		Yes			
Croton	Croton	Yes				
Crown of Thorns	Koeberlinia spinosa	Yes				
Datura	Datura			Yes	Yes	
Dieffenbachia	Dieffenbachia		Yes			
Dog Fennel	Chamaemelum P, Dysodiopsis or Eupatorium capillifolium	Yes				
Earleaf	Acacia auriculiformis					Yes
Elderberry	Sambucus		Yes			
Elephant Ear, Dumbcane	Alocasia / Colocasia		Yes			
Eucalyptus	Eucalyptus	Yes	Yes	Yes		
Ficus (all members)	Ficus	Yes				
Firethorn	Pyracantha		Yes			
Fishtail Palm	Caryota					
Flame Lily	Gloriosa		Yes			
Florida Holly				Yes		

APPENDIX B - LIST OF PROHIBITED PLANTS

Common Name	Scientific Name	Plants or Their Parts Know to Cause				County Prohibited
		DermatoloQy	Gastro	Respiratory	Death	
Gaillardia	Gaillardia Aristata	Yes				
Ginkgo	Ginkgo	Yes				
Gladiolus	Gladiolus		Yes			
Holly(except Dahoon Holly and Yaupon Holly	Ilex		Yes			
Honeysuckle	Lonicera				Yes	
Hydrangea	Hydrangea		Yes			
Ivy	Hedera		Yes			
Juniper	Juniperus	Yes				
Kudzu	Pueraria montana (P. Lobata)					Yes
Lantana	Lantana				Yes	
Leadwort or Doctorbush	Plumbago	Yes				
Mango	Mangifera	Yes				
Melaleuca, Punk Tree	Melaleuca equinquenervia	Yes		Yes		Yes
Milkweed	Asclepias		Yes			
Mistletoe	Arceuthobium, Korthalsella, Phoradendron, or Viscum				Yes	
Morning Glory	Ipomoea eriocarpa		Yes			
Night Blooming Jasmine						
Okra	Abelmoschus	Yes				
Old World Climbing Fern	Lygodium microphyllum					Yes
Oleander	Nerium			Yes	Yes	
Peaches, Cherries, Plums, Apricot	Prunus family				Yes	
Pencil Cactus						
Periwinkle	Vinca			Yes		
Pineapple	Ananas	Yes				
Plum pine	Podocarpus		Yes			
Plumeria	Plumeria	Yes				
Poinciana	Delonix regia or Peltophorum pterocarpa					
Poinsettia	Euphorbia	Yes				
Poison Ivy, Oak, Sumac	Toxicodendron radicans, Toxicodendron, or Toxicodendron vernix	Yes		Yes		
Pokeweed	Phytolacca				Yes	
Potato					Yes	
Pothos or centipede Tongavine	Epipremnum pinnatum	Yes				
Pride of Barbados	Caesalpinia pulcherrima		Yes			
Privet(except Florida	Ligustrum		Yes	Yes		

APPENDIX B - LIST OF PROHIBITED PLANTS

Common Name	Scientific Name	Plants or Their Parts Know to Cause				County Prohibited
		Dermatoloav	Gastro	Respiratory	Death	
Privet)						
Rosary Pea	Abrus precatorius				Yes	
Schefflera(except Dwarf Schefflera)	Schefflera arboricola Fuscidea arboricola					Yes
Trumoet Creeoer	Campsis radicans	Yes				
Tung Oil Tree	Vernicia fordii	Yes	Yes			
Yew	Taxus				Yes	

STRUCTURAL DESIGN CRITERIA
TABLE OF CONTEXT

GENERAL 2

CRITERIA 3

A. GENERAL STRUCTURAL REQUIREMENTS 3
B. THRESHOLD BUILDINGS 4
C. LOAD REQUIREMENTS 4
D. CONCRETE 5
E. MASONRY 6
F. METALS 7

STRUCTURAL DESIGN CRITERIA

GENERAL

A. The Design Professional shall use this document in conjunction with the District Educational Specifications, District Master Specs, Florida Building Code (Edition as of Design Contract Approval Date), State Requirement for Educational Facilities (SREF), and contract documents.

B. Goals:
   1. Provide safe, economical, and easy to build school facilities under uniform criteria.

C. This Section contains requirements for following elements.
   1. General Structural Requirements
   2. Threshold Buildings
   3. Load requirements
   4. Concrete
   5. Masonry
   6. Metals

D. In this document, the term Engineer represents the professionally qualified Design Engineer of Record and/or Engineering Consultant, duly licensed in the State of Florida, that signs and seals project design documents.

E. The Engineer is the person responsible for the design and development of project documents.

F. The Engineer shall request, in advance and in writing, deviations from these Structural requirements.
   1. The MCSD shall review the requested deviations; based on good engineering practices and/or economics, and either approve or deny the request in writing.
   2. Any approved deviations are valid only for the specific request.

G. Design shall incorporate the latest editions of the following design requirements or code requirements.
   1. Florida Building Code (FBC)
   2. American Society of Civil Engineers (ASCE)
   3. American Concrete Institute (ACI).
   4. American Institute of Steel Construction (AISC).
   5. American Iron and Steel Institute (AISI).
   6. American Society for Testing and Materials (ASTM).
   7. American Welding Society (AWS).
   8. Applied Technology Council (ATC).
   9. Concrete Reinforcing Steel Institute (CRSI).
   10. Portland Cement Association (PCA).
   11. Pre-stressed Concrete Institute (PCI).
   12. Steel Deck Institute (SDI).
   13. Steel Joist Institute (SJI).
   14. Other School District Design and Specification Guidelines.

H. Submittal and other general requirements for structural specification sections shall be listed in Division 01, and shall not be repeated in individual Specification Sections.

I. This Criteria is applicable to new construction, remodeling and renovation of existing facilities.

J. The Criteria shall not limit or restrain the performance and liability of the professional or professionals responsible for the integrity and performance of the structure.

K. The use of the Criteria in this document does not exempt the Design Professionals from any federal or state code or standards controlling the design and construction of any Facility.

L. The Criteria establish the minimum structural standards that will govern the structural design, contractual documents, and construction of MCSD facilities.

CRITERIA

A. GENERAL STRUCTURAL REQUIREMENTS

1. Design the structural systems and methods for ease and speed of erection, cost effectiveness, long life, minimum maintenance, maximum flexibility, and adaptation for future expansion.
2. Design floors to minimize vibration effects.
3. Design and provide expansion joints, control joints, construction joints, and isolation joints to prevent uncontrolled stress cracks in the structure and sitework according to the latest engineering standards.
   a. Use components designed for applicable locations and install according to manufacturer's requirements.
   b. Show details for expansion joints on both architectural and structural documents.
   c. Show details for other joints on the appropriate documents.
4. Floor slabs: Plans shall indicate all contraction, isolation, construction and expansion joints for poured concrete on grade.
   a. Space joints in accordance with good engineering practice, per ACI guidelines.
   b. Longer side of a rectangular panel should not exceed more than 1½ times the smaller.
   c. Provide additional joints as required to control cracking.
   d. Provide diamond shape construction joint around freestanding interior columns.
   e. Call for contraction joints to be saw-cut to ¼ the slab's depth (minimum).
   f. Provide diagonal reinforcement at re-entrant corners where contraction joints do not intersect at that corner.
5. Exterior walls shall be masonry or concrete.
   a. Metal stud framing systems at exterior wall location, are accepted only on a per condition basis with prior District approval.
   b. Exception: Soffits may use light gage metal framing of adequate capacity to resist gravity and wind loads.
6. Do not use gypsum board or plywood on the exterior of building behind stucco.
7. Cementitious grout shall be non-metallic, non-corrosive, non-shrink, non-staining, and non-reactive with surrounding metals and substrates.
8. Use high-strength, non-shrink grout for the setting of base plates and railing posts.
9. Provide inserts, anchors, bolts, hangers, or other means to support equipment, piping, ceilings, or other items suspended from structure.
10. Florida Registered Professional Structural Engineer shall sign and seal all plans containing structural requirements.
11. Design low slope roofs to resist ponding of water. Design slope into structure to greatest extent possible to reduce amount of tapered insulation.
12. Coordinate with the Electrical Engineer on design and placement of transformer vaults and with FPL Standards for Vault Design.
13. Roofs of EHPA's may be either cast-in-place minimum 4" normal weight concrete over metal decking or equivalent structural system.
    a. Roofing system may be modified bituminous roofing membrane for low slope roofing, or standing seam metal roofing for slopes greater than 1:12 which meets design requirements of FBC.
    b. Roof support structure may use, either structural pre-cast, prestressed concrete deck, minimum 4" thick, or steel decking over steel joists, if building is not designated as shelter.

c. Roofs and roofing components shall have adequate bearing, anchorage against wind uplift, diaphragm anchorage action, impact resistance, and resistance to rain based on applicable design loads.

14. Calculations, when requested shall conform to the following:
    a. Provide legible, organized, indexed, and collated calculations showing all of the load conditions considered and engineering assumptions made, including load reductions with code basis.
    b. Calculations generated by a computer program shall include both the input and analysis/design as part of the output.
    c. A Florida Registered Structural Professional Engineer shall sign and seal the calculations.
15. Provide visual record of surrounding structures outside school property at construction projects requiring driven piles, heavy vibratory compaction equipment or blasting.
    a. A video record shall be made before work start of adjacent structures both on and off-site, before, during, and after pile driving, heavy vibratory compaction or blasting activities.
    b. Blasting is not allowed.

B. THRESHOLD BUILDINGS
1. Definition: "Threshold building" means any building which is greater than three stories or 50' in height, or which has an assembly occupancy classification as defined by the Florida Building Code that exceeds 5,000 SF in area and an occupant content of greater than 500 persons.
2. Plans of Threshold Buildings shall contain a statement certifying that, to the best of the engineer or architect's knowledge, drawings and specifications comply with applicable minimum building codes and the applicable fire safety standards
3. The Architect/Engineer of record shall prepare structural inspection plan, showing the proposed schedule and procedure for performing the inspection.
    a. Note: The structural inspection plan shall provide specific inspection procedures and schedules to allow for adequately inspect during construction.
4. The project manual shall include procedures for preparation and submittal of:
    a. Certified shoring and reshoring plans and details.
    b. The Shoring and Reshoring plans shall indicate the length of time that the shoring shall remain in place before and after reshoring, and the removal sequence of the shoring.
    c. Submit the Shoring and Reshoring plans to the SBCC and Permitting Authority having jurisdiction before beginning the structural portions of the job.
    d. A specialty Structural Engineer registered in the state of Florida shall certify the shoring plan.
    e. The specialty Engineer shall inspect the installed shoring prior to placing any concrete.

C. LOAD REQUIREMENTS
1. The structural design for wind forces must comply with requirements of ASCE-7-10, Chapter 16 of the FBC, and the building envelope shall maintain its integrity and protect the building contents.
    a. A basic wind criterion, per the Florida Building Code is a three-second-gust velocity of 140 mph, with an Importance Factor of 1.15, and Exposure Category "C".
    b. Design buildings and portions of buildings as "enclosed", do not design for a "partially enclosed" structure.
    c. Openings shall have passive impact resistant system to meet the FBC requirements for opening protection in section 1606.1.4.

d. Pay special attention to louvered rooms such as mechanical rooms that will create an imbalance in the internal pressure. Depending on building geometry, this may require "internal" doors and walls designed for external pressures (compartmentalization).
e. Exception: Design covered walks, breezeways, PE shelters, and similar structures at the appropriate enclosure classification per the FBC.
f. Exception: May design remote facilities such as concession stands, remote storage facilities, etc with an importance factor of 1.0.

2. Roof loads
   a. Design all roofs for live load 20-psf. minimum, and in accordance with the FBC.
   b. Design all roofs appropriately for any special loading situations such as rooftop equipment, penthouses, and other equipment supported by the roof structure, etc.
      1) Superimposed design dead loads on roofs shall be the actual dead loads of systems, roofing, MEP allowance, collateral load, etc plus 5-psf (allowance for re-roofing) or 25-psf for steel framed roofs, whichever is greater.
      2) For concrete roof assemblies, superimposed design dead loads on roofs shall be the actual dead loads of systems, roofing, MEP allowance, collateral load, etc plus 5-psf, (allowance for re-roofing), but not less than 15-psf.
   c. Roof uplift designs and assembly shall comply with the design loads as determined by ASCE 7-10 using the criteria listed above.
3. Design interior partitions for minimum of a 5-psf lateral load.
4. Design stairs (steel or concrete) and their supports for 100-psf minimum live load.
   a. Railings and guardrails in accordance with chapter 16 of the FBC.
   b. Design system for each load case and size members based on maximum stresses occurring in those members.
5. Design exterior soffits and their supports for appropriate wind positive and negative pressures due to wind load in conjunction with gravity loads.
6. All buildings and portions of buildings shall meet the impact requirements stated in the FBC Chapter 16 and section 423 (24) (d) as applicable.

D. CONCRETE
1. General Design Criteria
   a. Concrete members shall use a minimum of f'c 3,000-psi, except as follows.
      1) Concrete slabs-on-grade and sidewalks- f'c 2,500 psi,
      2) Architectural Precast Concrete: fc 5,000 psi.
      3) Floors with polished concrete finish: fc 4,000.
   b. Use of lightweight concrete shall be on case by case basis and shall be approved by District. Lightweight concrete shall be 2.5" thick above deck flutes.
   c. Use synthetic micro fiber reinforcement in lieu of wire reinforcement for shrinkage control and thermal cracking in nonstructural concrete (plain concrete) slabs on grade.
      1) Do not use to replace required steel reinforcement.
   d. Form all surfaces to receive concrete.
      1) Earth forming of foundation work is not permitted for foundations or slabs-on-grade.
   e. Lintels abutting cast-in-place columns shall also be cast-in-place.
   f. Provide corner reinforcing at tie beam and footing intersections as required by FBC.
      1) Detail structural beams per ACI standards and requirements.
   g. Mix design for slabs on grade shall conform to recommendations in ACI 302.
      1) Consider the addition of a midrange water reducer into the mix design.
   h. Consider the addition of a high range water reducer into the mix design for highly congested/reinforced spaces.
2. Pre-Stressed Concrete Joists with Composite Slab Construction:

a. Recommend this system for second floor structures.
b. Composite slabs shall be thick enough to allow for in-slab conduit and steel reinforcement or similar items to have the proper coverage, without displacing reinforcing steel.
c. Provide reinforcing in composite slab in both directions per ACI requirements.
d. The Specialty Engineer shall sign, date, and seal the pre-stressed concrete joists shop drawings.

3. Tilt-Up And Pre-Cast Concrete Construction may be allowed if preapproved by District's Facilities Director.
   a. Provide anchorage at base of concrete tilt-up panels to concrete slab-on grade or foundation in the form of cast-in-place steel reinforcing bars or welded embedded anchor plates.
      1) Design embedded anchor plate assemblies to provide protection from corrosion for the life of the structure.
      2) Slab-on-grade welded wire fabric is not acceptable as the medium of anchorage to tilt-up panels.
   b. Conform to ACI 551 (Tilt-Up concrete Structures) and ACI 533 (Guide for Pre-cast Concrete Wall Panels) as applicable.
   c. The Specialty Engineer shall sign, date, and seal the tilt-up shop drawings.

E. MASONRY
1. General Design Criteria
   a. The tie-beam/tie-column construction method as defined in the FBC is acceptable.
      1) Tie beam/tie-column must satisfy all design loads imposed upon them by gravity and/or wind.
      2) Do not mix tie-beam/tie-column construction and reinforced masonry construction in the same building.
   b. Concrete masonry units in a fire-resistive assembly shall not be cut or channeled in a way to reduce the assembly's fire resistance rating.
   c. Structures designed using reinforced masonry shall conform to the FBC and ACI 530/530.1.
      1) This pertains to structurally designed masonry construction reinforced, partially reinforced or non-reinforced.
   d. The maximum spacing of vertical reinforcing in exterior masonry walls shall be 4'-0" o.c.
   e. Do not use reinforced masonry columns for point loads in excess of 20,000 lbs. (use a poured concrete column).
   f. Do not place 2 layers of reinforcing in a single cell of an 8" wide masonry wall.
   g. Use thicker wall, stagger the reinforcing, or provide another method to limit number of bars in single cells of 8" wall.
   h. Provide lateral support for block walls, either or both vertical or horizontal.
      1) Vertical heights of masonry between horizontal supports shall be in accordance with the wall lateral support requirements as per the FBC, Table 2107.1.
   i. Footings supporting more than 1O' of bearing block wall shall be a stem wall footing.
2. Glass Block
   a. Designer may use glass block in limited applications, if approved by the District's Facilities Director.
   b. Glass block at exterior wall locations shall be solid glass block.
   c. Glass block at interior locations shall have a wall thickness of at least 6".
   d. Glass block walls shall be limited in square footage based on area/load table listed in ACI 530 Chapter 7.

e. Set glass block in 16-gage minimum steel frames.

F. METALS
1. General Design Criteria
a. Protect products made of aluminum, aluminized, or otherwise treated with aluminum when in contact with concrete by providing sleeves, coating or wrapping aluminum.
b. Specify isolation coatings where dissimilar metals are in contact or where aluminum is in contact with concrete or lime surfaces.
c. Do not use lead-based paints or primers. Products used shall be low VOC compliant.
d. Specify coat of rust preventative touch-up paint applied to damaged or cut surfaces of steel members, joists and metal decking.
1) In non-exposed areas, touch up coat shall be of different color from shop coat.
2) Use G60 or G90 (where possible) zinc-rich galvanizing paint for galvanized members and connections.
e. Standing steam metal roofs shall have concealed fasteners, joints are at top of seams and machine crimped, and roofing panels extend full length from eave to top of roof.
f. Detail structural steel connections, or provide design loads (shears and moments) and specify to Specialty Engineer who provided their design.
g. Structural or miscellaneous steel exposed to earth or weather shall be G90 hot dipped galvanized.
1) Steel encased in concrete or to receive spray-on-fireproofing does not require primer coat.
2) Other steel shall receive primer applied in manufacturer's shop.
h. For metal-framed components or assemblies, structural drawings shall clearly detail entire component or assembly including members and connections.
1) In lieu of showing complete design, designer shall modify appropriate specification sections and locate Engineering and Shop Drawing requirements in those sections.
2) Clearly identify and specify work scope delegated to Contractor's Engineer on drawings to require Specialty Engineer.
3) Project designer shall review and approve Shop Drawings.
2. Structural Steel And Other Metals
a. Provide with camber where applicable to eliminate or minimize deflection due to design loads, do not exceed allowable deflections as stated in the FBC, Table 1601.1, and the following:
1) Camber for structural steel members shall not exceed L/240 or 2" maximum.
b. Structural Steel shall be fire-protected. UL steel assembly rating provided to comply with applicable fire-resistive requirements.
3. Steel Joists
a. Add drawing note "Joists shall not be fabricated using electrical resistance welding".
b. Steel joist, and joist girder shop drawings to include but not be limited to erection and fabrication plans, and calculations, shall be submitted to the Building Department, signed, dated, and sealed by State of Florida Registered Structural Engineer.
c. Indicate typical joist connection per SJI standards but not less than minimum required connection to resist combined shear and uplift loads (whichever is greater).
1) Indicate minimum length of bearing and bearing condition of joist.
d. In joists subject to uplift add continuous bottom bridging at the first interior bottom panel point.
e. Supports shall provide anchored stabilizer plates for joist girders and tie joists (as required).
f. Provide with camber to eliminate or minimize deflection due to design loads.

g. In concrete construction, steel joists shall bear on steel bearing plates embedded on masonry/concrete construction.
h. In steel construction, steel joists shall bear on top flanges of steel beams or girders.
i. UL steel assembly rating provided to comply with applicable fire-resistive requirements.

4. Metal Deck:
   a. Roofs with metal decks provide have angle or other structural element around perimeter of building to connect the deck, both parallel and perpendicular, to joist bearing.
      1) Connections of metal deck around perimeter shall be as required to develop required diaphragm and uplift loads, but not more than 12" apart.
   b. Use weld washers or screw attachment for connections of metal deck; 24-gage and thicker metal decking at the discretion of the Structural Engineer.
   c. Call out connectors and connection spacing of metal deck to supporting framing.
   d. Do not use vented metal deck beneath a dry system roof deck.
   e. Metal decks shall be galvanized G90.
   f. Metal decks supporting roof loads shall not be less than 24-gage.

END OF STRUCTURAL GUIDELINES

MECHANICAL DESIGN CRITERIA

TABLE OF CONTEXT

GENERAL 3

CRITERIA 4

A. HVAC DESIGN CRITERIA. 4

1. DESIGN DOCUMENTS SHALL COMPLY WITH ALL CODES AND REQUIREMENTS OF THIS SECTION 4
2. GENERAL DESIGN CONDITIONS: 4
3. COOLING LOAD CALCULATIONS: 4
4. BUILDING ENVELOPE: 4
5. MEDIA CENTER 4
6. DINING ROOM AND KITCHEN 5
7. STAFF DINING 5
8. KITCHEN MANAGER'S OFFICE 5
9. DRY FOOD STORAGE, WALK-IN COOLER AND FREEZER IN KITCHEN AREA. 5
10. PE COACH'S OFFICE/ PLANNING ROOM 5
11. KILN ROOM EXHAUST SYSTEM 5
12. CUSTODIAL ROOM / JANITOR CLOSET EXHAUST SYSTEMS 6
13. TOILET EXHAUST SYSTEMS 6
14. COMPUTER AREAS 7
15. MECHANICAL EQUIPMENT ROOM)/(ELECTRICAL ROOM ..... ?
16. ROOF PLANS: 7
17. EQUIPMENT IDENTIFICATION MARKS 7
18. EQUIPMENT SCHEDULES: 7
19. INSTALLATION DETAILS: 8
20. CONTROL SCHEMATICS 8
21. DESIGN FOR TEST AND BALANCE (TAB) WORK 8
22. CHILLER PLANT (INDOOR AND OUTDOOR TYPE CHILLER PLANTS) 8
23. INDOOR CHILLER PLANT (WATER COOLED CHILLERS) 9
24. OUTDOOR CHILLER YARD (AIR COOLED CHILLERS) 9
25. CHILLERS, GENERAL REQUIREMENTS (AIR COOLED AND WATER COOLED) 9
26. AIR COOLED CHILLERS 10
27. WATER COOLED CHILLERS 10
28. COOLING TOWERS 10
29. CHILLED WATER (CHW) SYSTEMS 11
30. CONDENSER WATER SYSTEM 11
31. PUMPS 12
32. MECHANICAL EQUIPMENT ROOMS (MERS) 12
33. AIR HANDLING UNITS (AHUS) 13
34. OUTDOOR AIR PRETREATMENT UNITS 15
35. VAV SYSTEMS 15
36. VAV TERMINAL BOXES 15
37. DX SYSTEMS 15
38. ELECTRIC DUCT HEATERS 16

39. FANS 16
40. AIR FILTERS 16
41. DAMPERS 17
42. FIRE DAMPERS (FDS) AND SMOKE DAMPERS (SDS) 17
43. SMOKE DETECTORS, HEAT DETECTORS AND SMOKE CONTROL SYSTEMS 17
44. DUCTWORK SIZING 17
45. DUCTWORK CONSTRUCTION - SUPPLY AIR (SA) & RETURN AIR (RA) 18
46. DUCTWORK INSULATION 18
47. DUCTED RETURN AIR (RA) SYSTEMS 18
48. OUTDOOR AIR (OA) SYSTEMS 19
49. EXHAUST AIR SYSTEMS 19
50. RELIEF AIR SYSTEMS 19
51. CEILING DIFFUSERS (CDS) 19
52. RETURN GRILLES (RGS) 20
53. EXHAUST GRILLES (EGS) 20
54. TRANSFER GRILLES (TGS) 20
55. DOOR GRILLES (DGS) 20
56. DOOR UNDERCUTS (UCS) 20
57. TEMPERATURE SENSORS, RELATIVE HUMIDITY SENSORS AND THERMOSTATS 20
58. LIQUID & AIR FLOW METERS, PRESSURE GAUGES AND THERMOMETERS 21
59. NOISE ATTENUATION OF MECHANICAL EQUIPMENT 21
60. ENERGY REBATES 22

B. HVAC CALCULATIONS 23

1. HVAC COOLING LOAD CALCULATIONS 23
2. INPUT DATA FOR HVAC LOAD PROGRAM 23
3. COOLING LOAD CALCULATION PROCEDURE 26

INDEX OF HVAC SYSTEM ABBREVIATIONS and ACRONYMS 27

MECHANICAL DESIGN CRITERIA

GENERAL

A. The Design Professional shall use this document in conjunction with the District Educational Specifications, District Guideline Specifications, and the contract documents to develop the design of District facilities.

B. The Design Professional is encouraged to specify and select high efficiency equipment and systems, as well as peak demand shifting and energy storage systems that can qualify for energy rebate incentive programs offered by Florida Power & Light Company (FPL).
   1. Exercise caution to maintain competitive bidding and avoid single-source supply of such equipment and systems. Single-source specifications will require the written approval of Martin County School Board (MCSB).

C. Goals:
   1. Design HVAC systems to create safe and comfortable environmental indoor conditions conducive to learning.
   2. HVAC systems must control and maintain indoor temperatures, humidity levels, provide required outdoor ventilation rates and not exceed noise levels as specified in this document or as required by applicable codes, standards and regulations.
      a. Indoor air must be clean and have no noticeable odor.
   3. Coordinate HVAC design with MCSB Guideline Specifications for Direct Digital Controls for central facility management and control of HVAC systems.
   4. Design HVAC systems and coordinate building envelopes with the architect to maintain positive building pressurization and eliminate infiltration of unconditioned hot and humid air into the building interior.
      a. This will prevent Indoor Air Quality (IAQ) problems manifested by the intrusion of moisture which can cause the growth of fungi (mold) and create musty smells.
   5. Design the HVAC systems and coordinate building envelopes with the Architect to meet applicable energy efficiency code requirements in accordance with the Florida Building Code (FBC).
   6. Design of HVAC systems must be coordinated with the Architect to be compatible with all components of the life safety systems.

D. This division contains requirements for the following sections:
   1. HVAC Design Criteria.
   2. HVAC System Load Calculation.
   3. Index of Abbreviations and Acronyms.

E. In this document the term "Engineer" represents the professionally qualified Design Engineer of Record and/or Engineering Consultant, duly licensed in the State of Florida, that signs and seals project design documents.

F. The Engineer is the person "in responsible charge" for the design and development of all project documents.

G. Project documents shall conform to and incorporate all requirements included in this document (Mechanical Design Criteria) and the requirements of the FBC. Where these requirements conflict the more stringent shall apply.

H. The Engineer must request, in advance and in writing, the approval for deviations from the requirements in Mechanical Design Criteria.
   1. Facilities Construction Manager must review requested deviations, and based on good engineering practices and/or economics, either approve or deny the request in writing.
   2. Any approved deviations are valid only for the specific request and for the specific project.

I. Project documents shall be in compliance with the following code requirements as adopted, updated and in effect on permit application date:
   1. Florida Building Code, FBC
   2. National Electric Code, NEC
   3. National Fire Protection Association, NFPA
   4. American Association of Heating Refrigerating and Air Conditioning Engineers, ASHRAE standards.

CRITERIA

A. HVAC DESIGN CRITERIA
   1. Design Documents shall comply with all codes and requirements of this section including the FBC.
   2. General Design Conditions:
      a. Use data from section "B" in addition to the requirements of this section.
   3. Cooling Load Calculations:
      a. Follow the procedure listed in section "B".
      b. Outdoor ventilation air shall be decoupled from the main space cooling load. A separate outside air pretreatment unit incorporating heat recovery shall be used to precondition the outside ventilation air.
   4. Building Envelope:
      a. Coordinate permanent vapor barriers with the Architect that prevent vapor transmission through the walls and the roof/ceiling assembly, and that will maintain their integrity for the life of the building.
      b. The proper location of the vapor barrier in humid climates is on the exterior, coordinate with Architect.
      c. Where vapor barriers are not possible due to the type of building envelope designed, the Engineer shall determine the latent load of moisture transfer across the building envelopes at peak dew point. This latent load (in addition to other space latent loads) shall be removed by the space cooling coil and/or the outside air cooling coil by lowering the leaving air relative humidity of the outside air cooling coil(s) to control the latent load of the occupied spaces at or below 50% RH.
      d. DO NOT allow the use a lay-in ceiling with a ventilated attic. This practice allows ambient humidity to enter the building and is not allowed by the Florida Building Code. Coordinate this requirement with the architect
   5. Media Center
      a. The central AHU serving all spaces in Media Center operates between the hours of 800 and 1600.
      b. Provide a separate DX system only in the Reading Room/Stacks areas to operate during AHU Off-hours (for humidity control).
         1) The DOC system will control operation of the DX unit when the central AHU is off.
         2) The DOC system shall control the central system's (relative humidity) RH-sensor (located in the Reading Room/Stacks area) and the DX system.
            a) The DOC system shall activate the DX system when the space's (RH) exceeds 60%.
            b) The DOC system shall turn the DX system off when the space's RH decreases below 55%.
         3) Size the DX unit for approximately 50% of the Reading Room/Stacks area envelope transmission load in order to ensure adequate running time.
         4) Duct smoke detectors for the DX system are not required.

a) The DOC system has a 24-hour monitoring capability of the temperature, humidity and smoke conditions in all Media Center spaces via space temperature & humidity sensors, and smoke detectors provided for the central AHU.

6. Dining Room and Kitchen
   a. Provide separate systems for the Kitchen and Dining areas.
   b. Transfer conditioned relief air from the Dining Room to the Kitchen to decrease the make-up air required when the kitchen's AHU, dishwasher exhaust fan, kitchen hood supply and exhaust fans are on.
   c. For other spaces in Dining and Kitchen areas refer to items below.
7. Staff Dining
   a. In constant volume systems, serve Staff Dining from the system that serves Student Dining.
   b. Provide VAV box or motorized control damper and T-sensor.
   c. Design the Staff Dining system for 150% of the staff dining's design CFM.
   d. This design will compensate for a 50% variation in supply air temperature due to the load in the Student Dining area.
8. Kitchen Manager's Office
   a. Serve Manager's Office from the system that serves the Kitchen.
   b. Size cooling equipment capacity based on 75°F indoor space temperature. Provide VAV box or motorized control damper and T-sensor.
   c. Design the Manager's Office system for 150% of the office's design CFM.
   d. This design will compensate for a 50% variation in supply air temperature due to the load in the Kitchen area.
9. Dry Food Storage, Walk-In Cooler and Freezer in Kitchen Area
   a. Dry Food Storage: Provide a dedicated DX system to operate continuously.
      1) Size equipment capacity based on 70°F indoor space temperature.
      2) Provide electric thermostat.
      3) Provide a T-sensor and RH-sensor for monitoring via the DOC system.
   b. Walk-in cooler and freezer: Provide T-sensor for monitoring via DOC system.
10. PE Coach's Office / Planning Room
    a. Provide small-dedicated DX system.
    b. Size cooling equipment capacity based on 75°F indoor space temperature.
    c. Provide electric thermostat.
    d. DX unit will cycle to maintain thermostat's set point.
    e. Monitoring of this space is required; therefore, provide a T-sensor and RH-sensor.
11. Kiln Room Exhaust System
    a. Coordinate with the Architect the design and location of the Kiln Room, to be preferably on an exterior wall.
    b. Design the Kiln Room exhaust system to operate independently from the central air conditioning systems, using outdoor unconditioned make-up air.
       1) Exhaust Air System: Provide ceiling exhaust fan with gravity back draft damper, volume damper, and wall discharge cap (preferred) or roof vent with bird screen.
       2) Make-up Air System: Provide intake wall louver (preferred) or roof intake hood with 1" x 1" bird screen, motorized two-position (open/closed) damper, and duct that terminates 12" AFF with a grille.
          a) Separate air discharge and air intake with a minimum distance of 1O'.

3) Electrically interlock (coordinate with Electrical Engineer) the exhaust fan and motorized damper.
4) Provide O -12 hour manual timer switch.
5) When the timer switch is activated, the exhaust fan is on and the make-up air damper is open.
6) Provide heat detector for fixed temperature only (200°F, no rate of rise feature) and connect to the school fire alarm system, coordinate with electrical.

c. An exhaust hood over the kiln is not required.
d. Coordinate with architect to insulate common walls between the kiln room and adjacent air-conditioned areas to prevent condensation and fungal growth on the kiln room walls.

12. Custodial Room / Janitor Closet Exhaust Systems
    a. Provide independent exhaust system(s) for custodial rooms.
        1) To maintain custodial rooms at negative pressure provide make-up air or transfer air systems.
        2) Do not provide supply air use conditioned make-up air if available.
    b. When conditioned make-up air is used, exhaust custodial rooms located within the AHU zone at 2 CFM/SF.
    c. In non-conditioned areas, or where non-conditioned make-up air is available, exhaust custodial rooms at 3 CFM/SF.
    d. For make-up air equal to 75 CFM or less, use a 3/4" door undercut, if fire rating allows, coordinate with Architect.
        1) For make-up air greater than 75 CFM, use a door grille or transfer duct/grilles.
    e. Provide ceiling exhaust fan with back draft damper.
        1) Provide exhaust ductwork with volume damper for balancing, and at the duct discharge provide roof or wall cap (preferred) with bird screen.
        2) Layout the exhaust ductwork so that the volume damper is above an accessible ceiling.
        3) If that is not possible, provide ceiling access panel.
    f. Custodial exhaust system is part of the relief air system that provides proper pressurization and air balance for the AHU zone.
        1) Within the AHU zone, interlock the start/stop of the custodial exhaust fan with the start/stop of the AHU fan via the DOC system.
13. Toilet Exhaust Systems
    a. To maintain toilets at negative pressure provide exhaust systems with make-up air or transfer air systems.
    b. When conditioned make-up air is used, exhaust toilets located within the AHU zone at 2 CFM/SF but not less than 50 CFM per water closet or urinal (in accordance with the FBC-M).
    c. In non-conditioned areas, or where non-conditioned make-up air is used, exhaust toilets at 3 CFM/SF but not less than 50 CFM per water closet or urinal (in accordance with the FBC-M).
    d. Toilet exhaust system is part of the relief air system that provides proper pressurization and air balance for the AHU zone.
        1) Within the AHU zone, interlock the start/stop of the toilet exhaust fan with the open/close of OA damper or start/stop of OA fan via the DOC system.
    e. Within the AHU zone, combine individual toilet exhausts to minimize the number of exhaust fans, and DOC system points for fan start/stop and fan status.
    f. When toilet exhausts cannot be combined, provide individual ceiling exhaust fans.

1) Control each fan from toilet light switch with 5-minute delay timer, coordinate with Electrical Engineer.
2) Although individual toilet exhaust fans are not controlled or monitored by the DOC system, they are included in the air balance analysis for the AHU.

g. Provide combined toilet exhaust fans or individual toilet ceiling exhaust fans with back draft dampers.
h. Design the exhaust ductwork to include separate (duct mounted) volume damper for balancing each exhaust grille and/or exhaust fan, and at the duct discharge provide roof or wall cap with 1" x 1" bird screen.
1) Layout the exhaust ductwork so that the fan and volume damper are (within 2') above an accessible ceiling.
2) If that is not possible, provide ceiling access panel(s).
i. Control noise from single toilets (without vestibule) adjacent to occupied spaces in Administration areas by extending walls to floor or roof deck above, coordinate with architect.
j. For single toilets in other locations with make-up air equal to 75 CFM or less, use a 3/4" door undercut if fire rating allows, coordinate with Architect.
1) For make-up air greater than 75 CFM, use either a door grille or transfer duct/grilles.

14. Computer Areas
a. Provide cooling to accommodate computer loads in Buildings.
b. Types of equipment are specified in Educational Specifications.
1) Provide programmable thermostat.
2) Provide T-sensor for monitoring via DOC system.
3) Do not provide RH-sensor, unit will cycle to maintain thermostat's set point.

15. Mechanical Equipment Room and Electrical Room
a. Provide MER and ER with conditioned or transferred conditioned relief air when the building's A/C system is operating. Provide thermostatically controlled exhaust fan in electrical rooms (with no microprocessor equipment) set to operate when the space temperature exceeds 85 degrees F.

16. Roof Plans:
a. Do not place MEP equipment on roof except for soil vents and Kitchen exhaust hoods. Exhaust Fans and Make-up Air units shall be wall mounted.
b. Where equipment must be placed on sloped roofs, provide service platforms as required by the Florida Building Code.
c. Where equipment is located near the edge of a roof, provide guard rail as required by the Florida Building Code.

17. Equipment Identification Marks
a. Define HVAC equipment using building number and equipment number. For example the first AHU and its associated systems in building 8 are identified as follows:
1) AHU: AHU 8-1
2) VAV Terminal Boxes: VAV 8-1-1, VAV 8-1-2, VAV 8-1-3, etc.
3) Outdoor Air Fan: OAF 8-1
4) Outdoor Air Damper: OAD 8-1
5) Relief Air Damper: RAD 8-1
6) Toilet, Custodial and General Exhaust Fans: EF 8-1, EF 8-2, EF 8-3, etc.

18. Equipment Schedules:
a. Provide schedules on drawings, not in the project manual.

b. Schedules shall include all data as defined in specific equipment sections in this document.

19. Installation Details:
    a. Provide details on drawings, not in the project manual.
    b. The engineer, not the contractor, shall provide proper detail design.
20. Control Schematics
    a. Provide Control Schematics on drawings and not in the project manual.
    b. Provide HVAC systems with individual classroom temperature control.
    c. Consider Resource Rooms and Skills Labs under same criteria as Classrooms.
    d. Consider each side of a Classroom or Resource Room with a moveable partition as two separate classrooms and provide independent temperature control for each.
    e. Serve adjacent auxiliary spaces from the classroom zone.
        1) Examples of auxiliary spaces are material storage, project storage, textbook storage, administrative storage, classroom toilets, mechanical equipment rooms, electrical equipment rooms, communication closet rooms, corridors, etc.
    f. Provide for DOC system conduits between buildings and the chiller plant as part of the electrical systems, coordinate with Electrical Engineer.
        1) Contact the DOC system representative for the number and size of conduits.
        2) Label DOC system conduits, coordinate with Electrical Engineer.
21. Design for Test and Balance (TAB) Work
    a. Design HVAC systems to allow TAB work to be properly completed, refer to NEBB Procedual Standards for Testing Adjusting Balancing of Environmental Systems.
    b. TAB contractor shall be NEBB certified.
    c. Show all CFMs on mechanical floor plans.
    d. Show collars and manual VDs for flexible duct run-outs to CDs and from RGs.
    e. Locate manual VDs at branch ducts that serve three or more CDs, RGs and EGs.
    f. If a system cannot be balanced using a flow hood, show locations for duct traverse test ports.
        1) Dimension the minimum upstream length (of 2 duct equivalent diameters) and minimum downstream length (of 1 duct equivalent diameter) of straight duct that are required for proper airflow measurement.
        2) For rectangular duct the equivalent diameter is defined as D=square root of (4xAxB/pi).
        3) Normally, fan powered relief air systems and outdoor air systems require duct traverse test ports for TAB work.
        4) For more accurate and/or continuous airflow monitoring or control, provide airflow-measuring station installed per manufacturer's recommendations.
22. Chiller Plant (Indoor and Outdoor Type Chiller Plants)
    a. The Engineer shall provide detailed (1/4" scale minimum) plans and sections of Chiller Plants.
    b. During Design Development, size chiller plant for proper service access and minimum operating clearances; refer to item e below. Chiller plant designs that do not provide proper service access and clearances are not acceptable. Coordinate work with the Architect.
    c. Show CHW and CW pipes, fittings, valves, specialties, and etc. (4" and larger) double line.
    d. Show locations of starters, disconnects, DOC system panels, chiller control panels, variable frequency drives, etc.

e. Using shaded areas show working clearances for all electrical equipment per 2002 NEC, Coordinate with Electrical Engineer and FMCS Representative.
f. For other than electrical equipment show clearances per manufacturer's recommendations, using shaded areas.
g. Provide equipment housekeeping pads and/or supports. Coordinate with Structural Engineer.
h. Provide hose bibb(s) with tamperproof anti-siphon vacuum breaker(s), coordinate with plumbing.
i. Provide duplex receptacle(s), coordinate with Electrical Engineer.

23. Indoor Chiller Plant (Water Cooled Chillers)
    a. Provide roll-up door in front of each chiller.
        1) Size door to allow chiller replacement as a single unit, coordinate work with Architect.
    b. Provide a rolling trolley and hoist system, attached to the building structure, and sized for the largest and heaviest chiller component, coordinate with Structural Engineer.
    c. In accordance with ASHRAE Standard15 provide refrigerant monitor and alarm control panel with horn and strobe, refrigerant sensors, remote alarm panels with horn and strobe outside of each personnel entrance door, and a Self-contained Breathing Apparatus (SCBA) within locked cabinets in a nearby locked room.
        1) Next to each remote alarm panel, provide sign that reads "SELF-CONTAINED BREATHING APPARATUS IS LOCATED IN ROOM #X".
    d. Provide emergency exhaust and ventilation system with wall intakes and roof discharges and with non-conditioned outdoor air make-up system.
        1) Exhaust air from the floor and the ceiling level to the outdoors in accordance with ASHRAE Standard15.
        2) Provide wall mounted electric thermostat.
        3) Exhaust fan will cycle to maintain thermostat's set point.
        4) Provide a refrigerant monitor and alarm control panel that overrides the thermostat and starts the fan in the emergency exhaust mode, in case of a refrigerant leak.
    e. Provide 4" floor drain(s) with trap primer(s) connected to sanitary system.
        1) Slope floor to the floor drain(s) coordinate work with plumbing, structural and architectural design.

24. Outdoor Chiller Yard (Air Cooled Chillers)
    a. Show required clearances.
        1) Minimum 6' clearance between air-cooled chiller and solid wall of chiller yard enclosure or adjacent building wall.
        2) Minimum 1O' clearances between multiple air cooled chillers
        3) Clearances recommended by chiller manufacturer shall apply if they are greater than those required by the District's guideline specifications.
    b. Provide concrete support base for chillers.
    c. Provide concrete slab on grade inside the chiller yard enclosure.
    d. Provide chiller yard enclosure designed for authorized access, proper air circulation and for sound attenuation. Coordinate with Architect and Structural Engineer.
    e. Coordinate with architectural and landscape design to prevent any overhangs (trees, structures, etc.) from intruding into the outdoor chiller yard enclosure.

25. Chillers, General Requirements (Air Cooled and Water Cooled)
    a. Calculate chiller capacity on the following,

1) The sum of each building's cooling load less the duplicate people loads in areas such as student dining, staff dining, media center, gymnasium, and auditorium.
2) Increase chiller capacity to account for CHW pump energy (2545 BTUH/BHP x BHP).

b. Select chillers based on minimum 42°F leaving water temperature (LWT).
1) Chiller LWT must be 1°F lower than the AHU cooling coil entering water temperature (EWT), (usually 45°F).

c. HCFC and HFC refrigerants are acceptable, DO NOT use CFC refrigerants.

d. The use of primary/secondary chilled water distribution systems shall be considered. Primary chilled water of 42°F (or as determined by the Engineer) should circulate from the chillers through a primary loop by base mounted end suction constant volume chilled water pumps. The chilled water should then be distributed to dedicated campus loop(s) to air handling unit coils through base mounted, end suction, secondary pumps controlled by variable frequency drives.

e. The use of thermal energy storage systems are encouraged if supported by a LCCA. Coordinate the design of thermal energy storage systems with the FP&L incentive program and the Facilities Energy Manager to insure proper compliance with all requirements of the FP&L incentive program.

f. When a thermal energy storage system is designed, provide the means to by-pass the storage tanks and provide chilled water cooling directly to the secondary chilled water system. This approach will allow cooling during extended periods of occupancy when the stored thermal energy cannot meet the extended load requirement.

26. Air Cooled Chillers
a. Provide LCCA for high efficiency air-cooled chillers.
b. Provide walls around chiller yard for noise attenuation.
c. Condenser coils shall be provided with a coating for corrosive weather conditions where coils are exposed to seacoast conditions.
d. Define the following data in the equipment schedules:
1) Tons, GPM, EWT, LWT, WPD, OAT, MCA/MFSNOLTS/PHASE, 0.00025 fouling factor.
a) For a 50% vented enclosure, use 95°F OAT.
b) For 3-sided (or less) solid wall enclosure use 95°F OAT.
c) For 4-sided solid wall enclosure use 105°F OAT.

27. Water Cooled Chillers.
a. Provide LCCA for high efficiency water-cooled chillers
b. When the total cooling load exceeds 600 tons of refrigeration, select water-cooled chillers.
1) Provide walls around cooling towers for noise attenuation.
2) Provide modulating tower bypass for one chiller on multiple chiller designs such that one chiller and tower can operate during periods of low load.
c. Define the following data in the equipment schedules :
1) CHW: Tons, GPM, EWT, LWT, WPD, MCA/MFSNOLTS/PHASE, 0.00025 fouling factor
2) CW: GPM, EWT, LWT, WPD, 0.00025 fouling factor.

28. Cooling Towers
a. Provide one stainless steel induced draft counter flow cooling tower per water-cooled chiller, do not use dual-cell, common sump towers.
b. Define the following data in the equipment schedule:

1) GPM, EWT, LWT, 80°FWB, HPNOL TS/PHASE, variable speed drive motors

c. For cooling tower drain(s) (non-valved emergency overflow and valved drain) provide 4" open hub drain(s) with trap primer(s) and recessed dome strainer(s).
   1) Connect to sanitary system, coordinate with plumbing design.
d. Provide cooling tower enclosure, design for easy authorized access, proper air circulation and for sound attenuation, coordinate with the Architect and Structural Engineer.
e. Provide a VFD tower fan which shall lead and lag multiple fans.
f. Coordinate with architectural and landscape design to prevent any overhangs (trees, structures, etc.) from intruding into the cooling tower enclosure.

29. Chilled Water (CHW) Systems
   a. Above 30-tons, CHW systems are preferred in lieu of DX systems.
   b. When more than one chiller is designed, arrange valves and pumps such that the system has the ability to run one chiller with associated pumps.
   c. The following CHW systems are allowed:
      1) Variable Air Volume (VAV)
      2) Single Zone with face and by-pass dampers (F&BPDs)
   d. Use the following CHW systems only when providing dedicated 100% outside air handling equipment:
      1) Packaged AHUs.
   e. Design CHW systems with a cooling coil minimum temperature difference of 12°F, to reduce pipe and pump sizes, and pump horsepower.
   f. Size CHW pipe. Note the GPM for constant flow systems and maximum GPM for variable flow systems.
      1) For below grade (exterior) CHW pipe, locate pipe offsets and swing-elbow take-offs to allow for proper thermal expansion-contraction.
         a) Pre-insulated welded steel pipe (up to 175' of straight run) with 36" of cover does not require thrust blocks, thermal expansion-contraction pipe offsets or swing elbows.
      2) For above grade (interior) CHW pipe, locate pipe anchors, pipe guides, swing-elbow take-offs, and thermal expansion-contraction devices.
   g. Do not route CHW pipe under the building slab except to penetrate the exterior wall.
   h. Do not route CHW pipe under sidewalks except to cross beneath them.
   i. To accommodate an emergency portable chiller, provide two spare CHW flanged line-size connections with butterfly valves and blank flanges.
   j. Insulate CHW piping, pumps, air separators and expansion tanks with foam glass insulation. The use of fiberglass insulation is not acceptable.
   k. Provide impact resistant covers for insulation in traffic areas.
   l. Provide instruments for the chilled water systems to include temperature sensors, flow meters, pressure gauges and thermometers.
   m. For systems with pump suction diffusers provide note that reads: "AFTER CHW SYSTEM FLUSHING AND PRIOR TO CHW SYSTEM BALANCING, REMOVE THE SCREENS FROM THE AHU STRAINERS AND HANG THE SCREENS NEXT TO THE STRAINERS".

30. Condenser Water System
   a. Design condenser water piping system so that any cooling tower can be isolated and can serve any chiller.
      1) For screw type chillers provide condenser water re-circulation line with temperature controlled three-way valve.

b. For cooling towers located on grade, do not provide strainers in the suction line. Locate strainers downstream of CW pump, to protect chiller barrel.
c. For CW chemical treatment system, provide 4" open hub drain with trap primer and recessed dome strainer.
    1) Connect to sanitary system coordinate with plumbing design.

31. Pumps
    a. Define the following data in the equipment schedules:
        1) GPM, TDH, pump RPM, BHP, pump performance chart, motor RPM, motor HPNOL TS/PHASE.
    b. For small systems with only one chiller/ tower, in addition to duty pump(s) provide one stand-by (back-up) pump for every chilled water system (CHW) and every condenser water (CW) system.
    c. Primary loop chilled water pumps shall be base mounted end suction constant volume chilled water pumps.
    d. Chilled water secondary pumps shall be base mounted, end suction pumps controlled by variable frequency drives
32. Mechanical Equipment Rooms (MERs)
    a. The Engineer shall provide detailed (1/4" scale minimum) plans and sections of MERs including Air Handler Units (AHUs).
    b. Size MERs for proper service access, and properly locate MER doors to provide service access (e.g. for coil removal), coordinate with Architect.
    c. Locate MERs on exterior walls with solid exterior doors with weather stripping to minimize infiltration and to reduce condensation on AHUs and ductwork.
        1) Provide conditioned air to MER (reference 15 above), coordinate with Architect.
    d. Show all ductwork double-line.
    e. Show pipes, fittings, valves, specialties, and etc. (2" and larger) double-line.
        1) When access is to the backside of the AHU, locate the coil connections on the backside with the coil pull from the front side.
    f. Using shaded areas, show service areas per manufacturer's recommendations for maintenance, removal or replacement of the following:
        1) Coil
        2) Fan motor and drive
        3) Fan shaft and bearings
        4) Filters
        5) Control actuators
    g. For multi-zone units provide 30" clearance at the AHU discharge end (SA) and locate the control actuators for the zone dampers in front of the AHU.
        1) Do not locate control actuators for the zone dampers on top of the AHU.
    h. Provide a minimum of 30" of clearance on all sides of the AHU.
        1) The Engineer, with approval may reduce the 30" clearance in tight rooms, in this order: (1) inlet end (RA), (2) back side, and (3) discharge end (SA).
    i. Show locations of starters, disconnects, DDC system panels, electric duct heater control panels, variable frequency drives, etc., and their working clearances per NEC requirements.
        1) Coordinate with Electrical Engineer and DDC system Representative.
    j. Provide housekeeping pad 6" larger than the AHU footprint and minimum 6" thick with ¾" chamfered edges.

1) The Engineer must verify that the 6" pad height will allow the proper size of condensate p-trap for the equipment selected as the basis of design.

k. For condensate, provide an open hub drain with a p-trap, and the lip at 1" AFF with a recessed dome strainer.
   1) Drain line shall have 1" air-gap above hub lip.
   2) Trap vent and trap primer are not required.
   3) Drain condensate drain to nearest catch basin or provide a drywell. If via roof drain system, provide an accessible backwater valve coordinate with plumbing design.

l. Provide 3" floor drain with trap primer connected to sanitary system for maintenance. Do not pipe condensate to sanitary system.
   1) Offset the floor drain vent below the roof to obtain a minimum of 1O' separation from the outdoor air intake for the AHU.
   2) Slope MER floor to a floor drain coordinate with Architect and Structural Engineer.

m. Provide hose bibb with tamperproof anti-siphon vacuum breaker.

n. Provide duplex power receptacle coordinate with Electrical Engineer.

33. Air Handling Units (AHUs)
   a. Limit the size of a single AHU to 15,000 CFM or a maximum coil face area in the AHU not to exceed 33 sq. ft.
      1) The Facilities Construction Manager may approve larger AHU on the project-by-project basis, if justifiable.
   b. Design the HVAC system so that AHUs can operate independently of each other and still maintain proper air balances within each AHU zone.
      1) Therefore, each AHU will have dedicated systems for outdoor air, exhaust air, relief air, and transfer air between AHU zones will (usually) be zero CFM. Exceptions are the dining and kitchen systems, the auditorium systems, the gymnasium systems and the locker/dressing room systems.
      2) The auditorium and gymnasium systems shall be capable of operating at reduced internal load conditions (low occupancy). Consideration shall be given to the use of one AHU for low occupancy internal load conditions.
      3) The use of Demand Controlled Ventilation for outdoor ventilation air shall be used in the auditorium and gymnasium systems in accordance with ANSI/ASHRAE Standard 62.1-2004, section 6.2.7 *" Dynamic Reset".* Demand Controlled Ventilation shall be controlled via a minimum two carbon dioxide sensors, one mounted in the common return air ductwork and one in the occupied space. Reset shall be based on the maximum carbon dioxide value measured. In all conditions, positive ventilation pressure shall be maintained within the habitable spaces. Reference ANSI/ASHRAE Standard 62.1-2004 *"Users Manual"* for additional information.
   c. Define the following data in the equipment schedule: CFMsA, CFMoA, TSP, ESP, fan RPM, fan BHP, fan performance chart, motor HPNOLTS/PHASE, motor RPM, filter APO, cooling coil data, electric duct heater data.
   d. Supply air CFM from AHU must not exceed the design sensible load requirements.
      1) The CFMsA in the equipment schedule is the concurrent block CFM with the allowed diversity that the AHU is selected on, and it is less than the supply air CFM in the air balance summary table shown on the individual HVAC plan sheets.
   e. List all filter APO separately, do not include in the ESP.
      1) Define all AHU components so that the sum of the ESP and the component APDs equals the TSP.

f. Attenuate noise generated by AHUs in accordance with NEBB Procedural Standards for the Measurement and Assessment of Sound and Vibration.
g. Provide central station AHUs with the following features:
    1) Casings for coil section and all sections down stream from coil section shall be double-wall with solid inner wall and 2" thick, 1.5 PCF insulation
    2) Sloped, insulated, and double-wall stainless steel condensate drain pans with anti-microbial coating.
    3) Field installed insulated copper condensate drain line with trap.
    4) Access modules (min. 15" width) with access doors to entering air and leaving airsides of the cooling coil, as listed in items 11 thru 14 below.
        a) Bolted panels in lieu of access doors are not acceptable.
    5) Minimum MERV 8 air filters in accordance with ASHRAE 52.2
    6) High efficiency motors.
    7) Differential pressure gauge for air filter pressure drop.
    8) Fan modules with internal vibration isolation
    9) F&BPD modules with blade jam and edge seals.
        a) Maximum leakage rate shall be 5 CFM/SF of blade area at 1" WG.
    10) For AHUs with F&BPDs (CHW), provide the following:
        a) Mixing/filter module with door
        b) External F&BPD module
        c) Medium access module with door
        d) Coil module
        e) Medium access (vertical or horizontal) module with door
        f) Fan module with door
    11) For VAV AHUs (CHW & DX), provide the following:
        a) Mixing/filter module with door
        b) Medium access module with door
        c) Coil module
        d) Medium access (vertical or horizontal) module with door
        e) Fan module with door
    12) For 100% Outdoor Air AHUs (DX), provide the following:
        a) Flat filter module with door
        b) Medium access module with door
        c) Cooling coil module
        d) Medium access module with door
        e) Internal F&BPD module
        f) Hot gas reheat coil module
        g) Fan module with door

34. Outside Air Pretreatment Unit
    a. Outdoor ventilation air shall be decoupled from the main space cooling load. A separate outside air pretreatment unit shall be used to precondition the outside ventilation air.
    b. Provide outside air pretreatment unit with direct expansion and may service more than one air handling unit.
    c. The unit should provide neutral 75°F dry bulb/42°F wet bulb outside ventilation air to air handling unit(s) which should mix this outside ventilation air with return air from the occupied spaces.

d. A pre-cool section consisting of chilled water coils or DX shall be provided prior to entering the DX section.
e. If required due to design space constraints, a combined air handling unit incorporating separate outside air pretreatment (pre-cool chilled water) and chilled water post cooling of the total supply air could be used.
f. The use of Demand Controlled Ventilation for outdoor ventilation air shall be used in the auditorium and gymnasium systems. Demand Controlled Ventilation shall be controlled via a carbon dioxide sensor mounted in the common return air ductwork.

35. VAV Systems
    a. Select VAV boxes in accordance with the manufacturer's selection procedure.
        1) Calculate room sound pressure levels based on sound power levels for VAV boxes, CDs, and RGs.
        2) Appropriate selection of VAV boxes should eliminate the need for duct silencers downstream of the VAV boxes.
36. VAV Terminal Boxes
    a. Define the following data in the equipment schedule:
        1) Box: Minimum CFM, maximum CFM, pressure differential at maximum CFM, discharge and radiated sound powers at 1" WG differential pressure for octave bands 2-7
        2) EH: KWNOLTS/PHASE, control steps, EAT, LAT
    b. Do not locate VAV boxes with bottom access to be above the ceiling light fixtures, etc., and provide working clearance for electric duct heaters per NEC requirements. Coordinate HVAC floor plans with reflective ceiling plans.
37. DX Systems
    a. When CHW systems are not economically feasible, the Engineer may use one of the following:
        1) Split System Single Zone: Provide dual refrigerant circuits, 100%-75%-50%-25% capacity steps, and face-split coil.
        2) Rooftop (RTU) units are not allowed.
        3) Split System VAV: DO NOT oversize the system. Provide dual refrigerant circuits, 100%-75%-50%-25% capacity steps, and row-split or intertwined coil. Provide bypass with motorized damper, controlled by static pressure, between supply and return duct for constant air flow through coil. Apply hot gas bypass (HGBP) if all other design options fail to meet the demands of the application. HGBP to the suction line shall bypass both the condenser and the evaporator, diverting hot vapor from the compressor discharge directly to the suction line. A liquid-injection valve shall meter liquid refrigerant into the stream of bypassed vapor, cooling it enough to prevent the compressor motor from overheating. The minimum saturated suction temperature at design shall be 43F to 45F. The expansion valve shall meter enough liquid refrigerant to satisfy the evaporator load and maintain a constant evaporator discharge temperature.
        4) If four capacity steps are not available, provide a hot gas reheat coil (not hot gas bypass).
            a) To control the amount of reheat, provide internal F&BPDs for the reheat coil.
        5) 100% Outdoor Ventilation Air Pretreatment Unit: Provide dual refrigerant circuits, 100%-75%-50%-25% capacity steps, row-split or intertwined cooling coils, and hot gas reheat coil.
        6) Provide capacity steps using either multiple hermetic compressors, or semi-hermetic with electric un-loaders or variable speed compressors.

a) Suction un-loaders are not acceptable.
b) Hot gas bypass does not provide a capacity step.

7) Small capacity, constant volume DX systems, with single refrigerant circuit, controlled with thermostats, are used in the following areas:
a) Communication Equipment Room (CER)
b) Kitchen's Dry Food Storage
c) Media Center (see item A.7 for details)
d) In areas a, b and c above, provide additional T-sensors for monitoring via DOC system, for additional details refer to criteria for specific areas listed above.

8) For other small capacity equipment that does not fit the above criteria, discuss selections with the Facilities Construction Manager.

b. Condenser coils shall be provided with a coating for corrosive weather conditions where coils are exposed to seacoast conditions.

38. Electric Duct Heaters
a. Locate electric duct heaters (EDHs) in supply ducts, inside the mechanical equipment rooms, down stream from the smoke detector and up stream from the supply air T-sensor.
1) For installation of EDHs inside the double wall ducts provide solid inner liners that start 6" up stream and end 6" down stream from the EDH.
2) For VAV systems provide EDH in each VAV box.
3) Provide working clearances for EDHs per NEC requirements.
b. Define the following data in the equipment schedule:
1) CFM, EAT, LAT, APO, control steps, KWNOLTS/PHASE.

39. Fans
a. Use ceiling and inline fans rather than roof-mounted fans. Roof-mounted fans are not allowed except as listed below.
1) Install inline fans in horizontal ducts that are within 2' of the accessible ceiling.
2) If ceiling space is not accessible provide ceiling access panel.
3) Exceptions are roof-mounted fans for the kitchen hood, dishwasher, and fume hoods. Where equipment must be placed on sloped roofs, provide service platforms as required by the Florida Building Code.
b. For small fans use direct drive fans rather than belt drive fans.
1) Provide volume damper for TAB (no speed controllers).
2) Exhaust fans require a back draft damper.
c. Provide fan interlocks for each fan controlled by the FMCS system.
1) Also, provide fan status for all fans with airflows of 300 CFM and larger that affect building pressurization and are part of the air balance for the AHU zone.
2) Fans that utilize non-conditioned air and not interlocked with zone AHUs do not require status monitoring.
d. Define the following data in the equipment schedule:
1) CFM, ESP, motor HPNOLTS/PHASE, motor RPM, fan RPM, fan performance chart (major fans only)
e. The outlet velocity of the fan in a VAV type AHU should not exceed 3000 FPM.

40. Air Filters
a. AHU filters shall be sized per ASHRAE Standard 52.2.
b. Design for minimum MERV 8 efficiency filters.
c. For VAV systems with VFDs, select fan motor HP based on loaded filters (0.6" WG).

d. For constant volume systems, select fan motor HP based on clean filters.
e. To facilitate the maintenance of clean air filters provide differential pressure gauges connected to the filter modules with metal tubing.

41. Dampers
    a. Provide manual Volume Dampers (VDs) where required for test and balance (TAB) work. Show location(s) of VDs on mechanical floor plans. Provide detail of VDs on mechanical drawings.
    b. Provide gravity back draft dampers where required (exhaust fans, gravity relief air systems, etc.)
    c. Where required provide two position (open/closed) motorized dampers (MDs) or modulating motorized dampers for air flow (CFM) control.
    d. Layout the ductwork so that all dampers are located above accessible ceilings, or provide ceiling access doors.
        1) To service motorized dampers provide duct access panels.
42. Fire Dampers (FDs) and Smoke Dampers (SDs)
    a. At duct penetrations through fire rated partitions provide required fire dampers.
    b. At duct penetrations through smoke barriers provide required smoke dampers.
    c. Design shall comply with FBC-M, NFPA 90A and NFPA 92.A and B.
    d. Use Type 'B' fire dampers with blade stack configured out of the air stream.
    e. In low velocity ducts with a depth of at least 13" and Facilities Construction Manager approval, the designer may use Type 'A' fire dampers with blade stack protruding into the air stream.
    f. Layout the ductwork so all fire and/or smoke dampers are located above accessible ceilings, or provide ceiling access doors.
        1) To service fire and/or smoke dampers provide duct access panels.
43. Smoke Detectors, Heat Detectors and Smoke Control Systems
    a. Provide smoke detectors in the supply and return systems of the air handling equipment; refer to FBC-M and NFPA 90A.
    b. In boiler and kiln rooms of non-sprinklered buildings_provide heat detectors connected to the school fire alarm system .
    c. For a stage area greater than 1000 sq ft or with a height greater than 50' provide a fan powered smoke control emergency ventilation system. The system shall be activated independently by each of the following: (a) activation of the sprinkler system in the stage area and (b) by a manually operated switch at an approved location . The emergency ventilation system shall be connected to both normal and standby power. Fan power wiring and ducts shall be located and properly protected to assure a minimum of 20 minutes of operation in the event of activation.
        1) Where a powered exhaust is not feasible and emergency power is not available, the designer may use two of more roof vents located near the center of and above the highest part of the stage area. They shall be raised above the roof and provide a net free area equal to 5% of the stage area . Vents shall open automatically by approved heat activated devices.
44. Ductwork Sizing
    a. The use of High Velocity Ducts is discouraged and is to be used only on large VAV systems between the air handler and the VAV boxes. When used, provisions must be made to properly attenuate sound in the duct system.
    b. Low Velocity Ducts (SA, RA, and EA): Size ducts based on a pressure loss of 0.1" WG/100' and a maximum velocity of 1600 FPM using the following sizing rules:
        1) Airflows less than 9000 CFM, size ducts based on 0.1" WG/100'.

2) Airflows greater than 9000 CFM, size ducts based on 1600 FPM.

c. High Velocity Ducts (AHU discharge to VAV box inlet): Size ducts based on a pressure loss of 0.3" WG/100' and a maximum velocity of 3000 FPM using the following sizing rules:
   1) Airflows less than 8,000 CFM, size ducts based on 0.3" WG/100'.
   2) Airflows greater than 8000 CFM, size ducts based on 3000 FPM.

d. To size the high velocity supply air ducts, start at the VAV boxes (with maximum design CFMs) and sum the CFMs for each branch duct back to the AHU discharge.
   1) When the supply air CFM in the main duct exceeds the scheduled CFM for the AHU, set the main duct CFM equal to the AHU CFM.

e. To reduce air turbulence at the discharge from the VAV air-handling unit size the supply air (round or oval) duct to match the outlet velocity of the fan and use full radius elbows for turns.

45. Ductwork Construction - Supply Air (SA) & Return Air (RA)
   a. Design in accordance with SMACNA standards.
   b. Provide galvanized sheet metal ducts with flexible Class I duct run out to CDs and from RGs.
      1) Use fiberglass board construction for ductwork is prohibited.
      2) Except for return air systems all double wall and medium pressure high velocity ductwork shall be flat oval or round with spiral seal ducts and welded fittings.
      3)
   c. Provide non-metallic flexible Class I duct run from branch SA ducts to CDs and from RGs to RA ducts. Limit length of flexible ducts to 6 feet maximum.
      1) At branch duct connection, use collar with manual VD.
      2) Use insulated flexible duct for supply air and non-insulated flexible duct for return air systems.
   d. Provide smoke detectors and heat detectors at required locations.
   e. Provide electric duct heaters at required locations.
   f. Provide manual volume dampers and motorized dampers at required locations.
46. Ductwork Insulation
   a. Rectilinear Supply Air Ducts; Insulation is required except as noted above.
   b. Return Air Ducts.
      1) Not required if located within the conditioned thermal envelope except that the first 30 feet from the air handler must be insulated in all cases to aid with sound attenuation.
      2) Exterior ducts; insulation is required, same as for supply air ducts
   c. Exposed ductwork shall be spiral ductwork which does not have to be insulated if within conditioned spaces. Coordinate locations with architectural design.
   d. Exhaust Air Ducts; insulation is not required.
   e. Outdoor Air Ducts.
      1) Non-conditioned OA; insulation is not required.
      2) Conditioned OA with or without reheat, provide insulation the same as for supply air ducts.
   f. Ceiling Diffusers; insulate the back of the ceiling diffusers.
   g. Flexible Class I Duct Run outs; insulation requirements are the same as for rigid metal ducts.
47. Ducted Return Air (RA) Systems.
   a. Ducted RA systems are standard.

b. Design routing of the return air ductwork to allow the RA grilles to be located near the exterior walls and windows.
c. The designer may use an all plenum air system only with written approval form the Facilities Construction Manager for specific application on project-by-project basis.

48. Outdoor Air (OA) Systems
    a. Provide galvanized sheet metal ducts and plenums designed in accordance with SMACNA standards. Refer to HVAC Load Calculations for outdoor air requirements.
    b. Typical outdoor air system shall include:
        1) OA intake louver, coordinate the size and location with Architect.
        2) Motorized OA two-position (or modulating for VAV systems) damper with duct access panel.
        3) Straight duct section with duct traverse test ports or airflow measuring station (for minimum required straight duct length refer to airflow equipment manufacturer).
49. Exhaust Air Systems
    a. Comply with SMACNA details and standards. Provide galvanized sheet metal ducts except for special exhaust systems:
        1) For fume hood exhaust and dishwasher exhaust provide stainless steel ductwork.
        2) For kitchen hood exhaust, provide stainless or black steel ductwork in accordance with NFPA requirements.
        3) For shower area exhausts provide aluminum or stainless steel ductwork.
        4) See requirements in for exhaust systems in kiln room, custodial rooms and in toilets.
50. Relief Air Systems
    a. Relief air systems are required in buildings or spaces pressurized with Outdoor Air.
        1) Provide galvanized sheet metal construction. Comply with SMACNA details and standards.
    b. If the pressurization air exceeds 0.15 CFM/SF for any AHU zone, provide fully ducted relief air system for that zone vented to the outdoors as in c and d below.
    c. Ducted Gravity Relief Air System: (preferred)
        1) Provide system with the following features: ductwork (sized for 500 FPM), relief grille (sized for 0.025"WG), motorized two-position (open/closed) damper (controlled by EMCS), counterbalanced gravity back draft damper (set to open at 0.05"WG), roof or exterior wall discharge (sized for 0.05"WG) with ½" corrosion resistant bird screen.
        2) Interlock the open/close function of the motorized control damper with the open/close of the QA damper or with start/stop of the OA fan via the FMCS.
        3) Where ever possible, transfer relief air into mechanical and electrical rooms to provide for free cooling and exhaust relief air to the outside from the mechanical and electrical rooms.
    d. Fan Powered Relief Air System (acceptable):
        1) System shall exhaust relief air from the main RA duct prior to the OA duct connection.
        2) System shall have the following features: 45° side-tap in the RA duct, inline fan with back draft damper, volume damper, and roof or wall discharge.
        3) For adequate maintenance access, locate the inline fan in the horizontal relief air duct to be within 2' of the ceiling.
        4) Show location of duct traverse test ports and interlock the start/stop of the relief fan with the open/close of the QA damper via the DOC system.
51. Ceiling Diffusers (CDs)

a. Use fixed blade type diffusers without damper or equalizing grid, aluminum construction (steel construction for fire-rated assembly), off-white color.
b. Use collar with volume damper at SA branch duct and insulated flexible duct as run out to CO.
c. For T-bar ceilings, provide 24"x24" extended panel and insulate back of CD and extended panel - independent of ceiling grid.
d. For other ceilings, secure CO to 1" x 1" x 18-gauge angles (located above the ceiling).
e. Define CDs and CFMs on floor plans.
    1) For throws other than 4-way, show throw directions.
f. In corridors, locate CDs min. 12' away from exterior doors to prevent condensation on CDs.

52. Return Grilles (RGs)
    a. Use 45° fixed louvers, 2" spacing, aluminum construction (steel construction for fire-rated assembly), off-white color.
    b. Use collar with volume damper at the RA branch duct with flexible duct run out from RG.
        1) Provide flexible duct length (as indicated above) required for noise attenuation.
    c. For T-bar ceilings, provide 24"x24" extended panel.
    d. For other ceilings, secure RG to 1" x 1" x 18-gauge angles (located above the ceiling).
    e. Define RGs and CFMs on floor plans.
    f. In corridors, do not locate RGs near exterior doors
53. Exhaust Grilles (EGs)
    a. Us 45° fixed louvers, 2" spacing, aluminum construction (steel construction for fire-rated assembly), off-white color.
    b. Provide separate volume damper for balancing each EG.
        1) Locate volume damper a minimum of five duct diameters from the EG.
    c. Layout the exhaust ductwork so that volume dampers are located above accessible ceilings, or provide ceiling access door.
    d. Define EGs and CFMs on floor plans.
    e. Provide rigid duct connections to EGs.
54. Transfer Grilles (TGs)
    a. Use 45° fixed louvers, 2" spacing, aluminum construction (steel construction for fire-rated assembly), off-white color.
    b. Size TGs for a maximum of 0.025" WG and the duct for a maximum velocity of 500 FPM.
    c. Show CFMs for TGs on plans to assure proper air balance.
55. Door Grilles (DGs)
    a. Use 70° opposed angle, 1" inverted "V" louvers, double flange, aluminum construction, off-white color.
    b. Size DGs for a maximum pressure loss of 0.05" WG.
    c. Show CFMs for DGs on plans to assure proper air balance.
56. Door Undercuts (UCs)
    a. Limit door undercuts to 3/4", if fire rating allows which corresponds to 75 CFM at a pressure loss of 0.01" WG for an interior 3' x 7' door, coordinate with Architect.
    b. Show CFMs for UCs on plans to assure proper air balance.
    c. UCs are allowed in fire rated doors but not in smoke doors.
57. Temperature Sensors, Relative Humidity Sensors and Thermostats
    a. For student areas, locate sensors away from primary exit doors to reduce damage.

b. Locate sensors on interior walls and away from windows to eliminate solar influence.
    1) Sensors shall not be located on walls that have the other side exposed to the outdoors.
c. Coordinate locations of sensors with Architect and DOC system.
    1) Coordinate with Architect to show locations of sensors on architectural floor plans, to prevent locating sensors on HVAC floor plans behind chalk boards, tack boards, bulletin boards, etc. and inside of case work.
d. H-Sensor:
    1) Provide one RH-sensor per AHU.
        a) For VAV systems, locate RH-sensor in a typical exterior zone.
    2) Gymnasium's Locker/Dressing Rooms: Provide only T-sensor (no RH-sensor).
    3) Kitchen: Provide only T-sensor (no RH-sensor).
e. Provide a T-sensor for monitoring via DOC system, with temperature control by a dedicated DX unit with thermostat in the following areas:
    1) Kitchen's Dry Food Storage
    2) Kitchen's walk-in cooler and walk-in freezer
    3) Administration's Data Processing Computer
    4) ILS Communication Equipment Room (CER) - Electric Thermostat
f. Thermostats usually providecj to control indoor design conditions in spaces served by dedicated DX systems.

58. Liquid & Air Flow Meters, Pressure Gauges and Thermometers
    a. Provide required instrumentation.
59. Noise Attenuation of Mechanical Equipment
    a. Attenuate noise at the school's property line in accordance with city/county noise ordinance.
        1) If the city/county does not have a noise ordinance, design to a noise criteria of 55 dBA.
    b. Attenuate noise of mechanical equipment at physical education play courts and ball fields to 60 dBA.
        1) The noise level is a maximum value at any location -- not an average value.
    c. Design the classroom spaces for a maximum noise criterion level of NC35, with Music Band, Chorus Rooms and Auditoriums of NC20 to NC25.
        1) Size ductwork and select air distribution devices (CDs, RGs and EGs) to satisfy above maximum room noise criteria.
        2) Assume a room attenuation of 5 dB.
        3) Add logarithmically the dBs of multiple outlets in a room to obtain the room noise level.
    d. For attenuation, at the inlet to and the discharge from the AHU, provide a minimum length of 25' of double-wall ducts with a perforated inner wall and 1" thick insulation encapsulated in a Mylar sleeve, or a liner as indicated below.
        1) Duct liner exposed to the air stream is not allowed unless the liner is finished with a thermosetting acrylic polymer coating and an anti-microbial coating and is limited to 25' from the air handling unit.
        2) If branch duct take-offs are necessary in the double-wall main duct, provide double-wall take-offs and double-wall branch ducts to obtain the minimum double wall lengths.
        3) Show locations of double-wall ducts on floor plans.
        4) For quality control, double-wall ductwork must be factory made.

a) Field fabricated double-wall ducts and fittings are not acceptable.

e. Noise attenuation; provide non-metallic flexible duct run outs from branch SA ducts to CDs and from RGs to RA ducts.
   1) The length of flexible duct must be a 6' maximum laying length.

f. Route the main VAV high velocity supply air duct over non-sensitive noise areas (corridors, storage rooms, toilets, etc.).
   1) If no other alternative route is possible except over a noise sensitive area, then take measures during design to prevent potential noise problems

g. The main low velocity return air ducts may cause a low frequency rumble, in noise sensitive areas, therefore, during the design development phase take measures to prevent this problem with one of the following options:
   1) Single wall round duct or flat-oval duct with acceptable duct liner.
   2) Double-wall duct with a solid inner wall.
   3) A low frequency band silencer within the MER.

h. To attenuate noise from VAV boxes, select boxes in accordance with the manufacturer's selection procedure for noise attenuation.

i. To control noise from single toilets (without vestibule) adjacent to occupied spaces in administration areas use U-shaped transfer air duct with two 90° mitered elbows for make-up air.

j. To attenuate noise from MERs coordinate with the Architect to provide walls of CMU or concrete construction extended to the roof or to the floor above.
   1) Fire-rate the walls if required by the Life Safety Plan, coordinate with Architect.

k. Coordinate with Architect the location of the outdoor chiller yard and the design of chiller yard equipment and enclosure, to maintain maximum 55-dBA-noise level at the school property line.
   1) To attenuate noise, the top of chiller yard enclosure wall shall be approximately 24" higher than the highest point of the chiller assembly when mounted on the concrete support pads.
   2) If not feasible (in urban sites with close proximity of residential properties), with the Facilities Construction Manager's written approval, the Engineer may consider indoor water cooled chiller plant with outdoor cooling tower as an alternative; refer to item I below.

l. Coordinate with Architect the location of indoor chiller plant with outdoor cooling tower, and the design of cooling tower equipment and enclosure, to maintain maximum 55-dB-noise level at the school property line.

m. To prevent mechanical transmission of vibrations to the building structure, and vibrations that could cause excessive noise levels, provide vibration isolation systems, isolators and/or supports for all rotating and reciprocating equipment.
   1) Provide vibration isolators between vibrating equipment and connected piping and ductwork.

60. Energy Rebates
   a. For schools served by Florida Power and Light (FPL), contact FPL to determine their latest requirements regarding rebates for Thermal Energy Storage (TES) systems, chillers, DX and other HVAC systems, equipment with adjustable speed drives (ASD), high efficiency motors, Demand Controlled Ventilation (DCV) etc.
      1) Determine if the equipment from the major manufacturers can qualify for the FPL rebates.

b. The District prefers the equipment with highest efficiency, and also requires competitive bidding for the equipment; therefore, equipment specifications should avoid single-source supply.
   1) In case of conflicts, the Facilities Construction Manager shall review available options, to determine the minimum specifications for acceptable equipment.

B. HVAC CALCULATIONS
   1. HVAC Cooling Load Calculations
      a. Provide computer calculations in accordance with ASHRAE's methodology.
      b. Provide computer printouts for both input data and output data.
      c. Use input data in item 2 below to design HVAC systems.
      d. The Engineer may submit a written request to deviate from standard District input data when dictated by good engineering practice or economics.
         1) The District's Project Manager will respond in writing either approving or disapproving the request.
   2. Input Data for HVAC Load Program
      a. Summer Design Conditions
         1) Indoor Conditions:
            a) Administration: 75° $F_{0\ 8}$ / 50% RH
            b) Media Center: 75° $F_{0\ 8}$ / 50% RH
            c) Classrooms, Shops and Labs: 75° $F_{0\ 8}$ / 50% RH
            d) Dining: 75° $F_{0\ 8}$ / 50% RH
            e) Kitchen: 80° $F_{0\ 8}$ / 50% RH
            f) Gymnasium and Locker/Dressing Rooms: 75° $F_{0\ 8}$ / 50% RH
            g) Auditorium: 75° $F_{0\ 8}$ / 50% RH
            h) Electrical Equipment Rooms not to exceed 85° $F_{0\ 8}$ when central HVAC system is operating (after hours, mechanical exhaust shall maintain temperature within 5 degrees of ambient)
      b. Winter Design Conditions
         1) Indoor: 70° FOB
         2) Note: Do not reduce heating capacity for heating loads from lights, equipment and people.
      c. People Loads:
         1) Elementary Schools: SENSIBLE/ LATENT LOADS 190
            a) Student Areas: BTUH / 190 BTUH
            b) Administration: 250 BTUH / 250 BTUH
            c) Kitchen: 250 BTUH / 600 BTUH SENSIBLE/
         2) Middle and High Schools: LATENT LOADS 250 BTUH / 250
            a) Student Areas: BTUH
            b) Administration: 250 BTUH / 250 BTUH
            c) Kitchen: 250 BTUH / 250 BTUH
            d) Wresting and Weight Rooms: 710 BTUH / 1090 BTUH
            e) Dance and Gymnastics Rooms: 710 BTUH / 1090 BTUH
      d. Occupancy Levels: Base Occupancy on:
         1) Classrooms:
            a) 18 students plus one teacher per classroom for pre-kindergarten through 4th grade.
            b) 22 students plus one teacher per classroom for 5th grade through 8th grade.
            c) 25 students plus one teacher per classroom for 9th grade through 12th grade.

2) Resource Rooms: 10 students plus one teacher per room.
3) Student Dining: The seating capacity is 15 gross square feet per occupant.
4) Staff Dining: The seating capacity is 15 gross square feet per occupant.
5) Stage for Cafeteria: 13 square feet per occupant.
6) Gymnasium: Main court seating capacity is 15 gross square feet per occupant. Bleachers are one per 18 linear inches of bleacher seating.
7) Auditorium: Seating capacity is number of fixed seats plus Stage 13 gross square feet per occupant.
8) Media centers: The seating capacity is 50 gross square feet per occupant for the reading and 100 gross square feet for stacks areas.
9) Music and Choral Rooms: The seating capacity is 20 gross square feet per occupant

e. Ventilation Rates:
1) Provide outdoor ventilation air in accordance with the latest revision of ASHRAE Standard 62.2.

f. Outdoor Air:
1) Determine that the ventilation rate specified above exceeds the total of all exhaust air from the spaces by 10% at all load conditions. If DCV is used, reduced ventilation shall be calculated and determined that the spaces are always in positive pressure with respect to exhaust air during periods of reduced ventilation.
2) If the ventilation rate is at or below the exhaust rate, increase the ventilation rate until it exceeds the exhaust rate by a minimum of 10%.

g. Lighting Loads:
1) Coordinate fixture selection with Electrical Engineer.
a) Coordinate with Architect and Electrical Engineer light fixtures with energy savings 32 W, T8 lamps and electronic ballast.
b) Appropriate values of Watts/room or Watts/square foot are acceptable

h. Miscellaneous Sensible Loads: Use documented electrical loads.

i. Miscellaneous Latent Loads: Use documented latent loads.

j. Computer/Equipment Loads:
1) Main Communication Equipment Room (MCER): If actual data is not available, use the largest of 13 W/SF or 5000 BTUH for equipment loads.
2) Communication Equipment Room (CER): If actual data is not available, use the largest of 6 W/SF or 300 BTUH for equipment loads.
3) Classrooms including Art, Music, Choral, Exceptional Student Education: 8 computers at 200 W/computer.
4) Resource Rooms: 4 computers at 200 W/computer.
5) Computer Labs:
a) Skills Development Labs: 30 computers at 200 W/computer.
b) Testing Labs: 30 computers at 200 W/computer.
c) Vocational Lab Spaces: Use varies from 8 computers to 30 computers, coordinate with the Educational Specifications. Use 200 W/computer or the following:
(1) Industrial Arts Lab Use 30 computers at 200 W/computer.
(2) Business and Technology Education Lab s: 30 computers at 200 W/computer.
(3) Related Classrooms included with Lab programs: Use 30 computers at 200 W/computer.

6) Offices, Secretarial/Reception areas: Use 1 computer per staff member at 200 W/computer.
7) Media Centers: Coordinate number of computers with the Architectural Design Guidelines. Use 200 W/computer.
   a) Group Projects area adjacent to Media Center: Use 30 computers at 200 W/computer.

k. CCTV Loads:
   1) In production room, review the electrical drawings (lighting) for studio lights.
      a) Studio lights are additional loads to the general room lighting.
   2) Control room; review the electrical drawings (power) for equipment connections.
   3) Provide table with loads itemized.
      a) For the load calculation, use the actual loads times a diversity of 1/3.

l. Use the following occupancy schedules to determine cooling load profiles so that the cooling loads will peak at the appropriate times.

1)	600 to 2200 hours	AHUs and Chillers are on.
2)	800 to 1700 hours	Administration.
3)	800 to 1600 hours	Classrooms.
4)	800 to 2200 hours	Media Center, Dining, Gymnasium, & Auditorium.
5)	600 to 1500 hours	Kitchen.
6)	800 to 2200 hours	Custodial.
7)	2200 to 600 hours	HVAC systems are OFF
8)	Weekends {coordinate with MCSB)	HVAC systems are on in selected areas
9)	Holidays	HVAC systems are OFF

10) Cooling and heating is scheduled for Monday thru Friday per item 1) above.
11) Schedules for people, lights, equipment, exhausts, and outdoor air are per items 2) thru 6) above.

m. For cooling load calculations assume year-round school schedule including summer months.

n. Staff Break Rooms and Home Economics Labs: These areas have a microwave oven (s), conventional oven (s) (Home Economics Lab only) and a 21 cu. ft. refrigerator(s). Coordinate with the design development furniture plan. Use the following heat loads

1)	Microwave Oven:	750 W (2600 BTUH)
2)	Conventional Oven (per cubic foot):	3,000 W (10,340 BTUH)
3)	21 $_{CU.}$ ft. Refrigerator:	410 W (1400 BTUH)

o. Electrical Equipment Rooms: The following data may be used in estimating heat loads in electrical equipment rooms with dry-type transformers, 600 Volts and under:

•	@ 80° Crise	@ 150° Crise
15 KVA	2250 BTUH	3000 BTUH
30 KVA	3500 BTUH	5000 BTUH
45 KVA	4250 BTUH	7500 BTUH
75 KVA	6000 BTUH	10000 BTUH
112 KVA	9000 BTUH	12000 BTUH
150 KVA	11000 BTUH	17500 BTUH
225 KVA	14500 BTUH	21500 BTUH
300 KVA	21000 BTUH	25000 BTUH
500 KVA	25000 BTUH	38000 BTUH

1) Design the ventilation or cooling systems so the temperatures in the electrical equipment rooms will not exceed 5°F above ambient when the central HVAC system is off.
    a) If ventilation is not feasible use split DX cooling equipment.
    b) To design the cooling systems use the actual heat loads from the transformer equipment manufacturer.

3. Cooling Load Calculation Procedure
    a. The following procedure is for all areas with the design conditions of $75°F_{08}$/50%RH, except in Kitchen; substitute $80°F_{08}$ for $75°F_{08}$.
    b. Verify the results from the load program. The space RH must be between 45 and 50% at all load conditions.
    c. Submit psychometric analysis for the coil at full load, 1% extreme dew point and coincident mean dry bulb (ASHRAE climatic design information), 50% load and 25% load.
    d. Use coil selection (computer) program to select the proper coil. Coil selection(s) shall accommodate latent loads at all load conditions to maintain space RH between 45 and 50%.

ELECTRICAL DESIGN
CRITERIA TABLE OF
CONTEXT

GENERAL 2

CRITERIA 2

A. POWER DISTRIBUTION SYSTEMS 2
1. NORMAL POWER: 2
2. EMERGENCY POWER 3
B. LIGHTING 5
1. LIGHT LEVELS **5**
2. EXTERIOR LIGHTING 5
3. SPORT FIELDS 5
9. FLUORESCENT LIGHTING FIXTURES 6
C. SWITCHING 6
1. CLASSROOMS AND ALL INSTRUCTIONAL SPACES: **6**
3. CORRIDORS: 6
4. GROUP TOILET LIGHT FIXTURES: **..... 6**
5. STUDENT LOCKER ROOMS: 6
6. ..... OUTDOOR: 6
D. ELECTRICAL RECEPTACLES 7
E. ELECTRICAL SYSTEMS 8
1. ENERGY MANAGEMENT SYSTEM **8**
2. LIGHTNING PROTECTION SYSTEM 8
3. FIRE ALARM SYSTEM **8**
4. SECURITY SYSTEM 9
5. VIDEO SURVEILLANCE SYSTEM 10
6. EMERGENCY RADIO COMMUNICATION SYSTEM 10
7. CARD ACCESS SYSTEM 10
8. INTERCOM SYSTEM 10
9. PUBLIC ADDRESS SYSTEM 11
10. INSTRUCTIONAL TELEVISION SYSTEM (ITV) 11
11. COMMUNICATION SYSTEM (VOICE AND DATA) 11
12. CEILING PROJECTOR SYSTEM **13**
F. .....GENERAL REQUIREMENTS 13

ELECTRICAL DESIGN GUIDELINES

1.1 GENERAL

A. The Design Professional shall use this document in conjunction with the District Educational Specifications, District Master Specifications, and the contract documents to develop the school campus.

B. Goals:
   1. Provide safe and secure life safety system for the structures.
   2. Provide safe useable electrical system for end users.

C. This division contains requirements for the following elements:
   1. Power Distribution Systems
   2. Lighting
   3. Switching
   4. Electrical receptacles
   5. Electrical Systems
   6. General requirements

D. In this document the term Engineer represents the professionally qualified Design Engineer of Record or Engineering Consultant, duly licensed in the State of Florida, that signs and seals project construction documents.

E. The Engineer is the person responsible for the design and development of allproject documents.

F. Design shall incorporate the latest design or code requirements.
   1. National Electric Code, NEC, 2008 Edition.
   2. Illuminating Engineering Society of North America, IES
   3. Florida Building Code, FBC
   4. Educational Specification
   5. National Fire Prevention Code, NFPA
   6. Add other references

G. Submittal requirements shall be combined with Architectural Requirements located in Division 01-General Requirements. Do not list redundant submittal requirements in each specification section.

H. The Criteria shall not limit or restrain the performance and liability of the Professional or Professionals responsible for the integrity and performance of the structure.

I. The Criteria is applicable to new construction and to the remodeling and renovation of existing facilities.

J. The use of the Criteria in this document does not exempt the Design Professionals from any federal or state code or standards controlling the design and construction of any Facility.

K. Do not put electrical systems on the same drawings with electrical power system.
   1. Provide separate electrical systems drawings.

1.2 CRITERIA

A. POWER DISTRIBUTION SYSTEMS
   1. Electrical service for new facilities shall be 277/480 volts, 3-phase, and 4-wire.
   2. New main distribution panels shall have a minimum 20% spare capacity (this means 20% spare capacity and 20% spare circuit breakers) for future modifications to the facility.

3. Provide all electrical distribution and branch circuit panels with 20% spare capacity (this means 20% spare capacity and 20% spare circuit breakers).
4. New schools and ancillary facilities shall have only one electrical service as defined by NEC Article. Existing schools shall have not more than two electrical services if located at opposite sides or ends of large sites having multiple buildings.
5. Provide only one electric meter for each new school facility.
   a. Remodeling, renovation or addition to the existing facilities, the Engineer shall determine the adequacy of the existing service, and if necessary replace with a larger service.
   b. Addition of second service entrance is not acceptable unless approved by Facilities Department.
   c. The Engineer shall obtain at least the following information from the local utility company:
      1) Available fault current.
      2) Existing buildings maximum demand for the past 12 months.
      3) Service entrance requirements including voltage load, and the location of power company transformer and primary power lines.
   d. Main switchboard shall be in a dedicated room with entry/exit door(s) as required. One d9or(s), double if needed, shall open to the exterior, if possible.
   f. Locate electrical distribution panels in dedicated electrical rooms. IT equipment Shall be located in separated room from electrical rooms with dedicated separate air conditioning system.
   g. Connect receptacle outlets dedicated for computers (communication outlets) to non-linear electrical panels.
      1) These non-linear panels shall not feed any other loads.
      2) Have 200% rated neutral bus bars, with the neutral feeder conductor rated at 200% of phase conductors
      3) Dry-type step down transformers (480 volts/ 208-120 volts) feeding non-linear panels shall be K-13 type.
   h. Provide type written labels for power and lighting panel circuits identifying each space served by circuits.
6. Provide Surge Suppression Devices for Power Distribution Equipment as noted below:
   a Normal and Emergency main service entrances equipment (panels).
   b All distribution and branch circuit panels for computer loads and electronic lighting.
7. Supply electrical service for each facility from one service entrance.

B. EMERGENCY POWER

1. The initial source of emergency power shall be a separate service drop or lateral.
   a. Connect the emergency service feeders directly from power company transformer to an emergency power panel-board or disconnect switch.
   b. Provide new facilities with an emergency generator.
   c. In existing schools, with major remodelings, renovations, or additions back-up emergency power source shall be from an emergency generator.
   d. When a new generator is added to an existing facility, make provisions to allow for future connection of entire campus to the generator system. This means sizing the new emergency generator, transfer switches, feeders, and

panel-boards to supply the entire facility.

2. Emergency Generator:
   a. Emergency generator shall be diesel powered from fuel tank integral with generator set.
   b. Generator fuel tank size:
      1) Non-EHPA facilities, provide on-site diesel storage fuel tank with 48-hours full demand operation.
      2) EHPA facilities, provide on-site diesel storage fuel tank with 48-hours full demand operation.
   c. Provide the emergency generator system with two separate automatic transfer switches and disconnect switches: life safety and optional standby loads.
   d. The following are systems that shall be connected to emergency generator through Life Safety Transfer Switch.
      1) Emergency Lighting.
      2) Exit Signs.
      3) Fire Alarm.
      4) Intercom System.
   e. Through Optional Standby Loads Transfer Switch.
      1) Security System.
      2) MDF and IDF Panel Boards.
      3) Card Access System.
      4) Video Surveillance System.
      5) Emergency Radio System.
      6) Receptacles for the EHPA.
      7) EMCS Control Panels.
      8) All Mechanical equipment required for EHPA.
      9) Cooler/Freezer.
      10) One (1) 125 volts, 20 amps receptacle in the Clinic.
      11) School District owned and operated lift stations at the site.
      12) Transfer life safety loads to generator within 10-seconds of normal power loss, transfer optional standby loads to emergency generator within 30 to 60 seconds of normal power loss.
      13) Emergency generator shall be located in an exterior location with a 6 ft. high masonry or concrete fence with 2-3 ft wide pair of chain link gates.
      14) Generators for the facilities designated as an EHPA shall have two remote annunciator panels; one in the EHPA managers' office and second in the main administrative office area.
      16) Spaces that are provided with emergency lights shall utilize light fixtures for all emergency lighting, connected to local lighting circuits ahead of any switching.
      17) Provide battery back up for the fire alarm panel.
   f. Provide Surge Suppression Devices for Power Distribution Equipment as noted below:
      1) Normal and Emergency main service entrances equipment (panels).
      2) All distribution and branch circuit panels for computer loads and electronic lighting.
   g. Supply electrical service for each campus by:

1) Normal electrical power from one service entrance.
2) Emergency power from a second service entrance.

C. LIGHTING
1. Maintained Light levels as follows:
   a. Classroom Lighting 60 FC
   b. Laboratories & Shops 70 FC
   c. Computer Laboratories 60 FC
   d. Media Center 60 FC
   e. Cafeteria 50 FC
   f. Kitchen 70 FC
   g. Administrative Offices 60 FC
   h. Teacher Planning Spaces 60 FC
   i. Gymnasiums (refer to IES recommendations).
   j. All Other Interior Areas (refer to IES recommendations)
   k. Parking Lot and Bus Loop areas
      1) Minimum maintained of one (1) footcandle with maximum to minimum ratio of 1Oto 1.
      2) Coordinate location of light poles with the architectural and landscape site plans to avoid conflict with trees.
      3) All fixtures shall be metal halide and be "cut-off' type fixtures to minimize light pollution.
2. Exterior Lighting
   a. Minimum of two footcandle for walkway covers and canopies.
   b. Minimum of two footcandle for building perimeter lighting.
   c. Provide wall mounted fixtures around the perimeter of the buildings and adjacent to all entrances to the building.
   d. Minimum of five footcandle at building entrances.
   e. All pole mounted light fixtures shall be metal halide.
   f. Fixtures on emergency circuit shall have quartz re-strike.
   g. Locate lighting fixtures for the aluminum (metal) canopies and walkway covers under the canopies with branch circuit conduits located overhead under canopies.
3. Sport fields
   a. Discuss the design criteria with the District prior to designing.
   b. All sports lighting shall meet the recommendations of IES.
   c. Sports lighting shall not be on a separate electric meter.
   d. Provide one 1000 watt incandescent or quartz light fixture on each sports field lighting pole for re-strike purposes.
   e. Sports fields lighting fixtures shall be metal halide.
4. For emergency lighting requirements refer to FBC and NFPA requirements.
   a. Provide two luminaries connected to emergency power in each area where emergency lighting is required.
   b. Provide switches for all emergency lights.
   c. Use relays for automatic switching of emergency lighting.
5. Provide illumination computations for all non-standard layouts.
6. Use of incandescent light fixtures is prohibited.

a. Provide down light fluorescent PL and general purpose fluorescent fixtures for non-performance hours.
b. Use of standard wattage compact fluorescent lamps is highly recommended.

7. Provide relay interlocks and on/off switches for emergency lights installed in classroom, corridors, group toilets, stairs and office areas to prevent 24 hours per day operation.
8. Fluorescent lighting fixtures shall be electronic lighting using electronic type ballast's T-5 or T-8 lamps (4100°K).
9. Fluorescent fixtures may have one, two, three or four lamps as needed.
   a. Fixtures with three and four lamps shall have single ballast to support all lamps.
   b. Use parabolic louvered fixtures in Administrative Areas and Offices, Conference Rooms, Classrooms, Resource Rooms, Dining/Multipurpose Areas and Media Centers.
   c. Use surface mounted fixtures in Storage, Mechanical, Electrical Rooms, IT Rooms and Custodial Closets.
   d. Use recessed fixtures with prismatic lenses in Toilets, Kitchens and Serving Lines.
10. Do not locate ceiling mounted light fixtures over stairs and intermediate landings, or other spaces with high ceilings which are difficult to access without special equipment.

D. SWITCHING

1. Classrooms and all instructional spaces shall have three light switches to provide widest range of illumination. Provide two switches for alternate fixtures on normal branch circuits, and one switch for lights at end of row adjacent to teaching wall.
2. Classrooms shall have occupancy sensors to shut off lights when spaces are not occupied.
3. Control light fixtures on emergency branch circuits in all interior spaces with a separate red toggle switch via an emergency relay.
4. Classrooms and other student occupied spaces shall have infrared sensors to shut off lights when no occupants are present.
5. Corridors shall have occupancy sensors located near main entrance doors and other natural lighting locations to override the light switches when in off position.
6. Group toilet light fixtures shall have key controlled light switches.
7. PE locker rooms:
   a. Locate switches in the teacher planning rooms.
   b. Provide occupancy sensors located near main entrance doors to override the light switches when in off position.

E. OUTDOOR LIGHTING

1. Provide Energy management system for exterior lighting.
   a. Time clocks for schools without energy management system.
   b. Outdoor lighting shall be divided into three categories and shall be provided with separate branch circuits and controls as stated below:
      1) Parking lot, service area, and bus loop area lighting. Provide multiple branch- circuits and controls.
      2) Walkway and canopy lighting. Provide multiple branch circuits and controls.
      3) Security lighting (building entrances.) Connect to emergency branch circuits. Provide multiple branch circuits and controls

4) Locate control of sport fields lights near fields and provide a time clock to override the manual controls.
5) Tunnel Walkways, Covered PE and Dining Areas shall be on separate circuits with separate energy management controls so that spaces can be illuminated during use on dark or cloudy days.

F. OTHER INTERIOR SPACES
1. Media, Cafeteria, Gymnasiums shall have alternate fixture switching and separate fluorescent fixture controls for light level reduction capabilities and for providing interim lighting while metal halide or other high pressure fixtures are activating.

G. ELECTRICAL RECEPTACLES
1. Do not use Floor Boxes, except at Food Service POS stations and on Stages unless the Facilities Department approves locations. Floor mounted receptacles shall be in heavy duty recessed boxes.
2. General requirements for 120v 15 amp electrical receptacles for other than specific power requirements for specific equipment and as follows:
   a. Classrooms: Instructional wall to have minimum of three outlets with one in center of instructional wall, and one quadraplex receptacles at Teacher's station. All other walls shall have two duplex receptacles each plus fourquadraplex receptacles for computers and other equipment.
   b. Corridors: Every 100', maximum 25' to end of corridors.
   c. Storage and other closets: Minimum of one in each space under 100 sq. ft. and one on each wall for storage spaces in excess of 100 sq. ft .
   d. Spaces such as Multipurpose, Media center, Dining, provide every 20', maximum 15' to end of each wall plus requirements per Educational Specifications.
   e. Other instructional areas: Same as classrooms plus requirements per Educational Specifications.
   f. Mechanical Rooms: Minimum of one on each accessible wall.
   g. Gymnasiums: Minimum of three per wall. Provide for electrical power to bleachers, score board and retractable basketball backstops.
   h. Teachers' Lounge: Minimum of four.
   i. Offices and Teacher planning rooms: Minimum of one per wall.
   j. Secretarial Areas: Minimum of two in each wall plus requirements per Educational Specifications.
   k. Electrical Rooms: Minimum of one.
   l. Cart Storage/Charging room provide charging capacities for:
      1) Elementary: 2 golf carts
      2) Middle: 4 golf carts
      3) High: 8 golf carts
   m. Provide a single junction box located directly behind EWC cabinet unless the water cooler manufacturer requires otherwise.
   n. Custodial Closets: Minimum of one GFI each closet.
   o. Custodial/Central Receiving: Provide two receptacles each wall at 4' AFF.
   p. Exterior: Every 150', maximum 50' to end of building, lockable metal cased weather proof GFI.
   q. Service outlets at 125 volts, 20 amps on exterior wall within 25' of HVAC equipment on the roofs and grounds.

r. Provide special outlets for equipment required by Educational Specifications.
s. Kiln Rooms: Two 50-amp, 208-volt, 3 phase kiln outlets and one GFI 20-amp, 125-volt general receptacle.
    1) Control kiln outlets with a programmable time clock located in the kiln room.
t. Skills and Computer Labs: Provide branch circuits required for the modular furniture (furnished by District) for minimum of 31 (one for instructor, 30 for students) computers in each lab.
    1) Coordinate with District for exact modular furniture power requirements.
    2) Provide setup for typical classroom in addition to above.
    3) All receptacle outlets connected to emergency power shall be red in color.
    4) All receptacle outlets for communication/data outlets shall be gray in color.
    5) Refer to educational specification and NEC for specific requirements and outlets for all equipment.
    6) Provide maximum of six duplex convenience receptacles on any branch circuit.
    7) Drawings shall be coordinated so those receptacle outlets are not located behind cubbies, shelving, and cabinets.

E. ELECTRICAL SYSTEMS
1. Energy Management System
    a. New and existing projects with HVAC renovated facilities shall have an energy management system in accordance with District Guideline Specifications.
    b. The EMS shall control the irrigation pump
    c. Connect the power metering device(s) at main switchboard(s) to Energy Management System.
2. Lightning Protection System
    a. Evaluate new facilities using the Risk Assessment Guide in NFPA 780, and provide protect accordingly. Lightning protection systems should be pole mounted as opposed to mounting on building or canopy roofs.
    b. Installation of the lightning protection system shall be in accord with District Guideline Specifications.
    c. Copper lightning protection materials shall not be installed on aluminum surfaces.
    d. Aluminum lightning protection materials shall not be installed on top of parapet copings, horizontal surfaces or roofs. Do not locate lightning protection on roof surfaces.
3. Fire Alarm System
    a. On existing campuses, new additions shall have fire alarm system compatible with system in existing buildings. If existing system is not compatible, replace existing system per Guideline Specifications.
    b. Where codes allow smoke detector or heat detector, provide heat detector to minimize false alarms.
    c. Provide ceiling mounted smoke detectors in media center, student records room.1 and stage.
    d. Provide weatherproof horns/strobes near every exit door on the exterior of the buildings.
        1) Provide additional weatherproof horns/strobes (with sealant around box as necessary) to maintain 100' between two devices.

e. Provide strobe lights in corridors, classrooms, all restrooms, instructional spaces, media center, cafeteria, kitchen, locker room, conference room, lobby, and any other common use area.
f. Provide horns in accordance with NFPA 72.
g. Synchronize all strobe lights in the same room or adjacent space that can be viewed together.
h. Fire alarm control panel shall not have drill switch.
i. Show fire alarm shut down relays on the electrical systems drawings adjacent to the equipment to be shut down.
j. In EHPA facilities locate the fire alarm control panel in EHPA manager's office.
    1) Fire alarm printer and a remote fire alarm annunciator panel shall be located in the main Administration office.
k. Provide the fire alarm system printer with a receptacle on life safety branch of the generator.
    1) Terminate the printer control wiring from fire alarm control panel in an outlet located next to receptacle.
l. Provide wire guards for fire alarm horns/strobes in gym.
m. Fire alarm circuits and devices shall be class 'A'.
n. Provide fire alarm pull station at the exit door from the administration reception area.
o. If there is no door between an interior group toilet room and the corridor and the sound level of the horns in the room meets the code requirements, provide strobe light only and no horn.
1) Provide horn/strobe if the toilet room has door.
p. Initiation of elevator lobby, top of shaft, or machine room smoke detectors shall recall the elevator to the designated or alternate level.
q. Heat and smoke detectors shall not be located in a direct airflow nor closer than 3' from a supply air or return air diffuser.
r. Provide an emergency voice evacuation system in auditoriums.
s. The activation of the facility's fire alarm system shall not activate the Kitchen exhaust hood fire suppression system, however the activation of the hood's system shall activate the facility's fire alarm system.
t. Provide surge protection devices on all wires that enter and leave the fire alarm control panels and booster panels.
    1) Provide surge protection devices on all wires that enter and leave the buildings.
    2) Provide surge protection devices on all 120-volt power circuits serving the fire alarm control panels and booster panels.
v. Fire alarm system shall monitor the fire pump run, fire pump fail, and fire pump phase reversal.
w. All fire alarm devices shall be shown on the fire alarm riser diagram.
x. Fire alarm system shall comply with the State Administrative Rule 69A-58.
y. Where fire alarm system is provided, unoccupied or unsupervised spaces shall have heat detectors. Heat detectors are not required, if the space is protected by automatic sprinkler system.

4. Security System

a. New facilities shall have security systems in accord Guideline Specifications. Security shall include building door contactors, site access control card system for doors and gates.
b. Locate security system main terminal cabinet within main Administrative area in Security Office.
c. The designer of the security, video surveillance, and card access shall coordinate design with the District's Operations Manager.
d. Provide conduit from the nearest security cabinet to fire alarm main terminal cabinet.
e. Provide conduit from main security cabinet to main data room.
f. Provide 120V receptacle fed from normal power and 120V receptacle fed from optional branch of generator at main security terminal cabinet.

5. Video Surveillance System
   a. New facilities shall have a video surveillance system in accord with District's Surveillance Specifications.
   b. Cameras will be installed after project is complete. Project shall have all conduit and junction boxes in contract. Designer shall obtain proposed camera location details from the District's Facilities Department. Provide conduit from main video surveillance cabinet to main security cabinet.
   c. Provide conduit from main video surveillance cabinet to main card access cabinet.
   d. Provide 120V receptacle fed from normal power and 120V receptacle fed from optional branch of the generator at main video surveillance cabinet.
   e. Video surveillance monitoring room shall have no windows with supplemental A/C unit, and the door lock keyed separately from the other doors.
6. Card Access System
   a. New facilities shall have card access system in accord with District Guideline Specifications.
   b. Provide conduit from main card access cabinet to main Data Room.
   c. Provide conduit from main card access cabinet to elevator machine room.
   d. Provide conduit from main card access cabinet to main entrance gate(s).
   e. Provide 120V receptacle next to each card access terminal cabinet fed from optional branch of the generator.
   f. At each controlled door, provide 120V to electric hardware's power supply fed from normal power source with emergency back-up power system.
7. Intercommunication System
   a. New facilities shall have an intercommunication system in accord with District's Guideline Specification Structured Cabling Systems.
      1) Provide structured cabling system for integrated communication and data system utilizing a Voice Over Internet Protocol System (VOiP) on common cabling platform to support the following systems:
      2) Data Processing
         a) Ethernet 10BASE-T
         b) Voice Applications
         c) Video
      3) The Structured Cabling Systems (SCS) shall interconnect all buildings and occupied spaces including classrooms, instructional spaces, offices, teacher planning areas, kitchen, dining, stage, gym, media center, and custodial

receiving areas connected to work area outlets at various workstation locations.

b. Provide ceiling mounted intercommunication speakers in the following locations:
   1) 75' on center in corridors and within 15' of the end of the corridor.
   2) Provide four speakers in each classroom, labs and two speakers in resource and conference rooms and larger work areas.
   3) Provide one speaker in clinic, enclosed offices and small work areas.
   4) Locate speakers in assembly spaces according to size of space.
   5) Provide speakers on the exterior of buildings at 100'o.c. Provide adequate coverage to bus loop area with additional speakers at bus loop and car loop areas.
c. Provide a call button and speaker adjacent to the card access reader at the entrance to the main office.
d. Provide protective wire cages around speakers in gym.
e. Do not locate intercom console in the general administration reception area; locate it in a nearby space such as production/workroom
f. Class change bell system shall be a tone generator through intercom system.
g. Provide Administrative Display Telephone outlet in EHPA manager's office.
h. In elementary schools, provide intercom administrative display telephones in principal's office, principal's secretary's office, principal's conference room, and admin reception area (total of four devices).
i. In middle and high schools, provide intercom administrative display telephones in principal's office, principal's secretary's office, principal's conference room, admin reception, student services reception, dean's reception, guidance reception, and grade level student services offices (total of seven devices). If the above mentioned areas are more than seven, the principal will decide which seven spaces get intercom administrative telephones.
j. Intercom call button or volume control devices in administrative spaces shall be located next to the light switches.

8. Public Address System
   a. New facilities shall have public address system in accord with District Guideline Specifications.
   b. Provide public address system in media center, courtyard(s), cafeteria, gym, and stadium.
   c. Provide microphone outlet at stage riser.
9. Telecommunication System (Voice and Data)
   a. New facilities shall have telecommunication system in accord with District's Guideline Specifications.
   b. Provide one duplex work area outlet (WAO) at the Nurse or Attendant's work station in the Clinic.
   c. Provide one duplex work area outlet (WAO) at each modular office work station.,
   d. Provide four duplex work area outlets (WAO) in portable classrooms and one duplex work area outlets (WAO) located at teacher station.
   e. Provide two work area quadraplex outlets (WAO) and one work area duplex outlet (WAO) in classrooms for computer work stations along the wall, one duplex work area outlet (WAO) shall be located at the teacher station.

f. Provide two quadraplex work area outlets (WAO) on either side of one duplex work area outlet (WAO) along one wall in Classrooms dedicated to six computer stations and a printer in addition to the teacher's station.
g. Provide thirty-one work area outlets (WAO) in Skills Development Labs, one duplex work area outlet (WAO) located at teacher's station and the remaining outlets for student computer stations.
g. Provide one quadraplex work area outlet (WAO) for four computers in Resource Rooms in addition to the teacher's station.
h. Provide two work area outlets (WAO) in enclosed Office spaces.
i. Provide one quadraplex work area outlet (WAO) for each four teacher stations in Teacher Planning Office areas.
j. Provide two work area outlets at Stage.
k. Provide two work area outlets in Kitchen Manager's Office and one workarea outlet at each serving line POS.
l. Provide 33 work area outlets (WAO) in Media Center reading area for elementary schools, two for general reference, one for charging desk and remainder for student stations.
m. Provide 34 work area outlets (WAO) in Media Center reading area for middle schools, two for general reference, two for charging desk and remainder for student stations.
n. Provide 34 work area outlets (WAO) in Media Center reading area, two for general reference, two for charging desk and remainder for student stations and 31 work area outlets (WAO) in Group Projects Room for high schools .
o. Work area outlets (WAO) shall be located 24" AFF and wired through integral wire trays and up through continuous countertop slots at back of cabinetry for connections to workstations.
p. Provide quad electrical receptacle outlet within 12" of the work area outlets.
q. Data Equipment Service Room shall be the entry point for data cables coming to the facility
    1) Main Communications Equipment Room (MDF) preferred size is 240 (16x 15) SF for middle schools/high schools accessible on at least three sides.
    2) Main Communications Equipment Room (MDF) preferred size is 144 (12 x 12) SF for elementary schools accessible on at least three sides.
r. Provide separate dedicated conditioned air system in data closets on each floor in each building.
    1) Intermediate Communications Rooms preferred size is 6' wide x 6' deep. Security, CCTV, Intercom or fire Alarm systems panels are allowed in Communications Rms, but sizes shall be increased accordingly.
s. Obtain communications infrastructure layouts and details from Facilities Department.
t. Design engineer shall coordinate ceiling projector system location with at all markerboard, smartboards and promethean board locations.
u. Do not use floor outlets.
v. Provide one work area outlet in main security cabinet, main card access cabinet, and main video surveillance cabinet.
w. Provide two work area outlets (WAO) in Principal's office and Conference rooms.
x. Provide work area outlet (WAO) in EHPA/Food Service Manager's Office.

y. Provide conduit from cash registers (POS) in serving lines to kitchen manager's office for electrical and data connections.
    1) Locate floor junction box under end of serving line equipment at POS stations in heavy duty water resistant enclosure.

10. Ceiling Projector System
    a. Provide speakers, wireless microphone for sound enhancement system, and video projector with interface system in all classrooms, labs, resource rooms, conference rooms, media, multipurpose/dining areas and conference rooms.
        1) Provide above equipment connections together in a single interface plate with a four plex receptacle within four feet of the interface plate and located on one wall adjacent at the teacher's station or as indicated by the District's Guideline Layout Drawings.
11. Telephones
    a. School telephone system shall utilize VOiP protocol.
    b. Provide six pair telephone cable to each building's Data Room and to Kitchen for backup telephone system.
    c. Provide sensaphone to notify emergency contact personnel of Freezer/Cooler failure.

F. GENERAL REQUIREMENTS
1. Install all 120v wiring and cable in conduit. Low voltage wiring and cable to power, fire alarm, intercom, telephones, instructional technology, and energy management systems shall be installed in cable trays located in Corridors and loose laid at 90° angles into spaces off corridors.
2. Provide pull wire in all empty conduits.
3. Minimum size conduit is ¾" except as noted for specific systems, see District's Guideline Specifications for detailed requirements.
4. All wiring on school side of transformer shall be minimum 12 gage copper.
5. Provide a grounding conductor in all conduits and raceways, size per NEC table 250-94 or 250-95, whether the grounding conductor is required by code or not except for service entrance conduits.
6. Minimum size wiring for emergency system power and lighting wiring is #10 AWG.
7. Provide power and lighting equipment schedules and panel-board schedules on the plans and not in the specifications.
8. Provide electro mechanical controller for lift station controller if required.
9. Mechanical and electrical piping and equipment shall be installed in uniform straight, plumb, level, horizontally (right angles) or vertically aligned ducts, pipes and conduit from equipment or storage rooms to end destination.
    a. Do not install conduit on exterior walls, soffits or fascia so as to minimize the negative impact on the aesthetics of the facility.
    b. Electrical equipment and conduit shall be painted to match the adjacent surface where exposed in finished spaces.
    c. Conduit penetrating floors, walls or ceilings shall be sleeved with oversized conduit and filled with fire sating material.
    d. Conduit penetrating floor shall be formed in 4" concrete curb around conduits.
    e. Mechanical piping or ductwork shall not installed on exterior walls, soffits or fascia.
10. Systems and equipment shall meet District's Guideline Specification requirements.

11. Provide all required systems and equipment design including special systems such as auditorium, multipurpose, dining areas, and gymnasium sound system, auditorium stage lighting and sound system, CCTV, security system, VOiP telephone system, instructional technology for data, voice and video, etc. for complete project.
12. Coordinates design with other consultants (mechanical, structural, civil, kitchen equipment).
13. Edit the specifications for the project, unedited specifications or that written by equipment vendors is not acceptable.
14. Provide empty conduits and pull-boxes for future portables in all new facilities. Provide two 4" conduits for power and seven 2" conduits for systems (two 2" conduits for intercom).
15. DO NOT use floor outlets in classrooms, labs, or at any wet locations.
16. Locate dry type transformers in Electrical rooms with outside walls and screened wall louvers for air circulation to the exterior.
17. Do not locate manholes or pull boxes within sport fields and play ground areas.

END OF ELECTRICAL DESIGN GUIDELINES

MARTIN COUNTY SCHOOL DISTRICT
FACILITIES/PLANNING/CONSTRUCTION
1050 SE 10TH STREET
Stuart, FL 34994

Date: _ _,_

MCSD Project Close-Out Form

Project School
Project Title
Architect's Project No. -

Item #	Status	Close-Out Item
1		3 Copies: Application For Payment, Signed and Sealed, Noted as Final Payment.
2		Consent of Surety to make final payment.
3		Release of Lien from all Sub-Contractors or Laborers who have filled an Intent to Lien.
4		Warranty/Guarantee from Construction Manager for one-year from the date of Substantial Completion.
5		Warranty/Guarantee from each Sub-Contractor for one-year from the date of Substantial Completion.
6		Copy of the approval by the Architect-Engineer and the transmittal to the end user 1. manuals, 2.shop drawings, 3.full set of record drawings, 4.brochures, 5.warranties, 6.list of sub-contractors with phone numbers, addresses and contact persons.
7		Verification that all applicable district personnel have been trained in the operation of their new equipment (per system: HVAC, controls, etc.)
8		Executed Roof Warranty in the name of the Martin County School District.
9		OEF Form 209, Certificate of Final Inspection.
10		Completed Punch-list.
11		SREF 4.2(3)(e) Architect's Certificate of Specification of Asbestos Containing Materials.
12		SREF 4.2(3)(e) Construction Manager's Certificate of Asbestos Use.
13		SREF 4.2(3)(d) Threshold inspector's statement that building complies with Threshold Plan.
14		OEF Form 110B, Certificate of Occupancy.
15		OEF Form 564 for new construction or additions to existing schools only
16		Contractor's Inspection Log Book
17		One copy of the Previous FISH Bldg. Plans & Site Plan and One copy of the Current FISH Bldg. Plans & Site Plan : (1) PDF Copy and Acad Files.

18		Please submit one PDF copy of each item listed above by email, thumb drive or CD to the Facilities Department.

SECTION 01 25 13
PRODUCT SUBSTITUTION PROCEDURES

PART 1GENERAL

1.1 SCOPE OF WORK

A. Administrative and procedural requirements for consideration of request for substitution during the design and construction phases.
B. Substitution Request Form.

1.2 REFERENCES

A. Section 01 33 00 – Submittal Procedures.
B. Section 01 42 00 – References.
C. Section 01 45 00 – Quality Control.
D. Section 01 78 00 - Closeout Submittals.

1.3 SUBMITTAL PROCEDURES

A. Transmit each substitution request on company letterhead with completed Form 01 25 00 A. Form is as indicated in Para. 3.02.
   1. During bidding phase, substitution requests shall be directed to Project Architect.
   2. During construction phase substitution requests shall be directed to Contractor/CM.
B. Substitution Form shall identify project, Contractor/CM and Architect during bidding phase plus Subcontractor or supplier during construction phase indicating Specification Section and Paragraph number of specified material and pertinent drawing and detail numbers, as appropriate.
C. Include complete information as required in the Substitution Form. Incomplete information will result in automatic rejection of the substitution request.
D. Apply contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information are in accordance with the requirements of the work and contract documents.
E. Schedule submittals to expedite the project, and deliver to Architect or Contractor/CM at business address. Coordinate submission of related items.
F. For each submittal for review, allow 15 days excluding delivery time to and from Architect or CM/Contractor.
   1. Identify variations from contract documents and product or system limitations, which may be detrimental to successful performance of the completed work.
   2. Provide space for Contractor/CM and Architect review stamps.
   3. When revised for resubmission, identify all changes made since previous submission.
   4. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
   5. Submittals not requested will not be recognized or processed.

1.4 SUBSTITUTION REQUESTS

A. Requests for substitutions shall be made not later than ten (10) calendar days prior to bid date by prospective bidders, or time set by Owner for receipt of GMP (Guaranteed Maximum Price) from CM. Requests received after the above dates may not be considered.

PART 2PRODUCTS

2.1 Not Used.

PART 3EXECUTION

3.1 FORM EXECUTION

A. Contractor/CM shall submit Product Substitution Request on Form 01 25 00A on following page with transmittal letter and self-addressed stamped envelope for Architect's use in returning response to substitution request.

3.2 SUBSTITUTION FORM 01 25 13A - PRODUCT SUBSTITUTION REQUEST

A. Specified Product _____

B. Sheet No./Specification Section and Paragraph_____

C. Contractor/CM has reviewed and approved proposed substitution?

Yes_____ No_____

D. Requested Product Substitution: _____

_____

E. Does Product Meet or Exceed Specified Product Requirements? Yes____No_____
(If answer is no, explain.)_____

F. Does Product Substitution affect dimensions shown on Drawings? Yes____No____
(If answer is no, explain.)_____

G. Reason for Requested
Substitution:_____
_____
_____

H. Cost Difference between Product Specified and Product Proposed:
Add $ _____Subtract $_____

I. Electrical Requirements equal to Specified Product: Yes_____ No_____ N/A_____
(If No or N/A,
explain):_____
_____
_____

J. Plumbing Requirements equal to Specified Product: Yes_____ No_____ N/A_____
(If No or N/A,
explain):_____
_____
_____

K. Mechanical Requirements equal to Specified Product: Yes_____ No_____ N/A_____
(If No or N/A,
explain):_____
_____
_____

L. Does the Product Substitution have any effect on other trades? Yes_____ No_____
(If yes, explain):_____

_____

M. Contractor/CM agrees to pay for changes in building design, including engineering and detailing costs, caused by requested product substitution. Yes_____ No_____

N. Signature of Bidder/Contractor/CM shall indicate function, appearance and quality of proposed substitution is equivalent or superior to specified item.

O. Contractor/CM assumes responsibility for delay or claims arising from review and evaluation of requested product substitution.

P. Approval of proposed substitution shall have no effect on coordination and installation of work in accord with contract documents.

Submitted by: For Use by the Architect and Owner:

_____ _____Received Too Late
Contractor/CM

_____ _____ Not Accepted
Firm

_____ Approved As Noted

_____ _____ Approved For Bidding Only,
Final Approval Contingent Upon Address
Submittal of Information in
Accord with this Section

_____ _____
Date Architect Date

_____
Owner Date

END OF SECTION

SECTION 01 29 00
PAYMENT PROCEDURES

PART 1GENERAL

1.1 SCOPE OF WORK

A. Procedures for preparation and submittal of Applications for Payment.
B. Unit pricing shall be in conformance with 2007 Edition of AIA A201 General Conditions of the Contract and as amended by Owner on July 13, 2009. Copy is included in Division 1, Section 00 72 00 – General Conditions.

1.2 RELATED SECTIONS

A. Section 01 22 00 – Unit Prices.
B. Section 01 33 00 – Submittal Procedures.
C. Section 01 78 00 – Closeout Submittals.

1.3 FORMAT

A. Payment format shall in accord with AIA G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheets.
B. Contractor/CM's AIA G702/703 equivalent forms including continuation sheets may be substituted for AIA Payment Forms if preapproved by Owner's Project Manager.

1.4 PREPARATION OF APPLICATIONS

A. Present handwritten pre-application draft payment forms to Owner for review before submitting applications for payment.
B. After revising draft payment forms, prepare and submit six typewritten copies or on electronic media printout Pay Application as preapproved by Owner.
C. Execute certification by signature of authorized officer.
D. Use data from Owner preapproved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
E. List each authorized Change Order as extension on AIA G703 - Continuation Sheet, listing Change Order number and dollar amount as for original item of Work.
F. Prepare Application for Final Payment as specified in Section 01 78 00 – Closeout Submittals.

1.5 SUBMITTAL PROCEDURES

A. Submit six copies of each Application for Payment.
B. Submit an updated construction schedule with each Application for Payment.
C. Payment Period: Submit at monthly intervals not later than the fifteenth of the month unless otherwise stipulated in the Agreement.
D. Submit Release of Liens waivers with each Application for Payment.

1.6 SUBSTANTIATING DATA

A. When Architect or Owner requires substantiating information, submit data justifying dollar amounts.
B. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.
C. Include following data with application.
    1. Partial release of liens from major subcontractors and vendors.
    2. Affidavits attesting to off-site stored products.
    3. Construction progress schedule, revised and corrected to reflect project status at time of payment application.

1.7 PAYMENTS

A. Payments may be made for materials stored off-site if preapproved by Owner's Project Manager and off-site facility is insured and bonded air conditioned warehouse, and only if project site doesn't allow storage or protection for equipment and supplies.
B. Payments will normally be made to Contractor/CM by 10th of each month, if copies are preapproved by Owner's Project Manager and received by 25th of previous month, unless otherwise stipulated in Agreement.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01 31 00
PROJECT MANAGEMENT AND COORDINATION

PART 1 GENERAL

1.1 SCOPE OF WORK

A. Project management, coordination of construction activities, interface with Owner's staff for existing facilities and project conditions related to project for new and existing facilities.
B. Meetings for field engineering and project coordination, preconstruction, construction procedures, pay application and progress meetings, pre installation and project closeout meetings.
C. Site mobilization, materials and equipment storage, site cleanup and demobilization.

1.2 RELATED SECTIONS

A. Section 01 25 13 – Product Substitution Procedures.
B. Section 01 29 00 – Payment Procedures.
C. Section 01 33 00 – Submittal Procedures.
D. Section 01 35 53 – Security.
D. Section 01 42 00 – References.
E. Section 01 45 00 – Quality Control.
F. Section 01 66 00 – Project Storage and Handling Requirements.
G. Section 01 78 00 – Closeout Submittals.
H. Section 01 91 00 – Commissioning.

1.3 COORDINATION AND PROJECT CONDITIONS

A. Coordinate scheduling, submittals, and to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating Owner's occupancy of completed portions of project or existing building on site, and items to be furnished or installed by Owner.
B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
C. Coordinate space requirements, supports and installation of mechanical and electrical work that is indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
D. In finished areas, except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
E. In finished areas with exposed ceilings, piping and conduits shall either concealed or be run at right angles and be attached to underside of floor or deck above. Wiring shall not be exposed. Exposed ductwork shall be painted spiral duct.
E. Coordinate completion and clean up of Work of separate sections in preparation for Substantial Completion and for portions of Work designated for Owner's partial occupancy.
F. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accord with Contract Documents, to minimize disruption of Owner's activities.
G. Owner will not consider change orders for extra work required by Contractor due to his inadequate coordination.

1.4 FIELD ENGINEERING FOR PROJECT LAYOUT

A. Employ Land Surveyor registered in State of Florida acceptable to Owner's Project Manager.
B. Locate and protect survey control and reference points.
C. Control datum for survey is that established by Owner's provided survey.
D. Verify setbacks and easements; confirm drawing dimensions and elevations.
E. Provide field engineering services. Establish elevations, lines, and levels, utilizing recognized engineering survey practices.
F. Submit copy of site drawing and certificate signed by Land Surveyor that elevations and locations of Work are in accord with Contract Documents.

1.5 FLOOR SLAB VERIFICATION SURVEY

A. Separate from Field Engineering noted above, Contractor/CM shall provide topographic survey of building floor slabs on grade to indicate that finish floor elevations and slab locations are per contract documents, water management and building department requirements.
B. Survey shall be submitted upon completion of slabs on grade. Remaining work shall not proceed until Owner's Project Manager has reviewed survey information and verified that floor slabs are constructed at proper elevation and locations.
C. Survey shall be prepared, signed and sealed by Florida licensed surveyor, other than the surveyor noted in Para. 1.04 Field Engineering.
D. Surveyor shall be selected form one of Owner's annual surveying vendors. List may be obtained from Owner's Project Manager.

1.6 PRECONSTRUCTION MEETING

A. Owner's Project Manager will schedule pre construction conference after Notice to Proceed.
B. Attendance Required: Owner, Architect, and Contractor/CM.
C. Agenda:
    1. Execution of Owner-Contractor Agreement, if not executed.
    2. Submission of executed bonds and insurance certificates.
    3. Distribution of Contract Documents.
    4. Submission of list of Subcontractors, list of Products, schedule of values, and progress schedule.
    5. Designation of personnel representing the parties in Contract, and Architect.
    6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders and Contract closeout procedures.
    7. Scheduling.
    8. Scheduling activities of Geotechnical Engineer.
    9. Issuance of Notice to Proceed.
D. Record minutes and distribute copies within two days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

1.7 SITE MOBILIZATION MEETING

A. Owner will schedule meeting at Project site prior to Contractors start of work.
B. Attendance Required: Owner, Architect, Special Consultants, and Contractor, Contractor's Superintendent, and major Subcontractors.
C. Agenda:
    1. Use of premises by Owner and Contractor.

2. Owner's requirements and partial occupancy.
3. Construction facilities and controls provided by Owner.
4. Temporary utilities provided by Owner.
5. Survey and building layout.
6. Security and housekeeping procedures.
7. Schedules.
8. Application for payment procedures.
9. Procedures for testing.
10. Procedures for maintaining record documents.
11. Requirements for start-up of equipment.
12. Inspection and acceptance of equipment put into service during construction period.

D. Record minutes and distribute copies within two days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

1.8 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of work at weekly intervals. Less frequent meetings may be requested for projects or work stages if requested in writing to the Owner’s Project Manager.
B. Make arrangements for meetings, prepare agenda with copies for participants, and preside meetings.
C. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner’s Project Manager, Architect, as appropriate to agenda topics for each meeting.
D. Agenda:
   1. Review minutes of previous meetings.
   2. Review previous Work progress.
   3. Field observations, problems, and decisions.
   4. Identification of problems that impede planned progress.
   5. Review of submittals schedule and status of submittals.
   6. Review of off-site fabrication and delivery schedules.
   7. Maintenance of progress schedule.
   8. Corrective measures to regain projected schedules.
   9. Planned progress schedule during succeeding work period.
   10. Coordination of projected progress.
   11. Maintenance of quality and work standards.
   12. Effect of proposed changes on progress schedule and coordination.
   13. Other business relating to work.
E. Record minutes and distribute copies within two days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

1.9 PREINSTALLATION MEETINGS

A. When required in individual specification section, convene pre-installation meeting at site prior to commencing work of section.
B. Require attendance of parties directly affecting, or affected by, work of specific section.
C. Notify Owner and Architect five working days in advance of meeting date.
D. Prepare agenda and preside at meeting:
   1. Review conditions of installation, preparation and installation procedures.
   2. Review coordination with related work.
E. Record minutes and distribute copies within two days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

PART 2 PRODUCTS

2.1 EQUIPMENT ELECTRICAL CHARACTERISTICS AND COMPONENTS

A. Motors: Refer to Electrical Sections for specific motor types.
B. Wiring Terminations: Provide terminal lugs to match branch circuit conductor quantities, sizes, and materials indicated. Size terminal lugs to NFPA 70, include lugs for terminal box.
C. Cord and Plug: Provide minimum 6' cord and plug including grounding connector for connection to electric wiring system. Cord of longer length is specified in individual specification sections.

PART 3 EXECUTION

3.1 EXISTING BUILDING PROJECT PROCEDURES

A. Materials: As specified in Product sections; match existing Products and work for patching and extending work.
B. Employ skilled and experienced installer to perform alteration work.
C. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.
D. Remove, cut and patch Work in manner to minimize damage and to provide means of restoring Products and finishes to original or specified condition.
E. Refinish existing visible surfaces to remain in renovated rooms and spaces, to specified condition for each material, with neat transition to adjacent finishes.
F. Where new Work abuts or aligns with existing, provide smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.
G. When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at natural line of division and submit recommendation to Architect for review.
H. Where change of plane of 1/4" or more occurs, submit recommendation for providing a smooth transition to Architect for review.
I. Patch or replace portions of existing surfaces, which are damaged, lifted, discolored, or showing other imperfections.
J. Work that penetrates fire or smoke rated partitions or floors shall be repaired to provide original fire or smoke rating.
K. Finish surfaces as specified in individual Product Specification Sections.

END OF SECTION

SECTION 01 32 16
CONSTRUCTION PROJECT SCHEDULE

PART 1 GENERAL

1.1 SCOPE OF WORK

A. Preparation of preliminary Construction Schedule, Contractor's/CM/GC final master Construction Schedule, hereinafter called the Construction Schedule, Short Interval Schedules (look ahead), and monthly updates.
B. Scope of work and project completion are as indicated. Bidders shall include with their bid, a proposed project schedule indicating each item of work in CSI numbering format showing each work division in CPM (Critical Path Method) work sequencing. Schedule shall base critical path on Owner's providing pre purchase of long lead items, and assuming that those products and services are delivered to the Contractor/CM on time for meeting proposed project schedule.

1.2 SUBMITTALS

A. Submit schedule in accord with Section 01 33 00 – Submittal Procedures.
B. Preliminary Project Schedule:
   1. Purpose of preliminary schedule is to determine Bidder's intent as to how work can be prosecuted to allow project completion in specified time frame.
   2. Bidder's shall comply with "The Use of CPM in Construction – A Manual for General Contractors" published by Associated General Contractors of America, Inc. Schedules shall utilize nationally recognized scheduling format such as Primavera or Microsoft Project. Software version selected shall be compatible with Owner's Microsoft Word or Office software so that schedule can be reviewed and saved in Owner's computer system.
   3. Schedule shall be on 11" x17" paper indicating project activities, duration, start and finish dates of each activity, float or slack time, critical path, and total number of days for project.
   4. Include float or slack time in Schedule. Float is defined as amount of time between earliest start date and latest start date or days between earliest end date and latest end date.
   5. Construction schedule shall begin based on Owner's intent to issue Notice to Proceed Letter to Contractor/CM, and be completed within "x" Calendar Days from NTP. Substantial Completion is "date", with "x" calendar days to Final Completion or "date".
   6. Preliminary Project Schedule shall be submitted with Bid Proposal. Failure to do so will be grounds for rejection of the Bid Proposal.

1.3 COORDINATION AND PROJECT CONDITIONS

A. Bidders are responsible for verification of existing conditions to the extent that they are observable and can be inferred by visual inspection.
B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
C. Coordinate space requirements, supports and installation of mechanical and electrical work that is indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.

D. In finished areas, except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
E. In finished areas with exposed ceilings, piping and conduits shall either concealed or painted and be run at right angles, and attached to underside of floor or deck above. Wiring shall not be exposed. Exposed ductwork shall be painted.
F. Coordinate scheduling to allow time for submittals, Owner's approval, Building Dept. review, permitting and inspections to ensure efficient and orderly sequence of installation of interdependent construction elements. Schedule shall provide for accommodating Owner's occupancy of other buildings on site, and items to be furnished or installed by Owner.
G. Owner will not consider change orders for extra work required by Contractor due to his inadequate coordination.

PART 2 NOT USED

PART 3 NOT USED

END OF SECTION

SECTION 01 33 00
SUBMITTAL PROCEDURES

PART 1GENERAL

1.1 SCOPE OF WORK

A. Administrative and procedural requirements for processing of submittals during construction process. Submittals may include the following:
   1. Proposed Products Lists.
   2. Proposed Vendor List.
   3. Product Data.
   4. Shop Drawings.
   5. Samples.
   6. Design Data.
   7. Field Test Reporting.
   8. Quality Control Reporting.
   9. Certificates.
   10. Manufacturer's Installation, Handling and Storage Instructions.
   11. Manufacturer's Field Reports.
   12. Erection Drawings.
   13. Closeout Documents
   14. Warranties.
   15. Scheduling of Work.
   16. Construction Progress Schedule.
   17. Submittals Schedule.
   18. Survey and Layout Data.
   19. Construction Progress Reporting.
   20. Periodic Work Observation.
   21. Photographic Documentation.
   22. Purchase Order Tracking.
   23. Operation and Maintenance Documentation.

1.2 RELATED SECTIONS

A. Section 01 29 00 – Payment Procedures.
B. Section 01 31 12 – Project Coordination.
C. Section 01 42 00 – References.
D. Section 01 45 00 – Quality Control.
E. Section 01 66 00 – Product Storage and Handling Requirements.
F. Section 01 78 00 – Closeout Submittals.

1.3 SUBMITTAL PROCEDURES

A. Submittal Procedures shall be in conformance with AIA A201 General Conditions of the Contract and as amended by Owner on July 13, 2009. Copy is included in Division 1, Section 00 72 00 – General Conditions.
B. Transmit each submittal with AIA Form G810-2001 or Owner’s Standard Transmittal form.
C. Sequentially number each transmittal forms. Revise submittals with original number and a sequential alphabetic suffix.
D. Identify project, Contractor/CM, subcontractor or supplier pertinent drawing and detail number, and specification section number, as appropriate.

E. Apply Contractor/CM's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information are in accord with requirements of the work and contract documents.
F. Schedule submittals to expedite the project, and deliver to Engineer and Contractor/CM at business address. Coordinate submission of related items.
G. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor/CM.
H. Identify variations from contract documents and product or system limitations, which may be detrimental to successful performance of the completed work.
I. Provide space for Contractor/CM and Engineer review stamps.
J. When revised for resubmission, identify all changes made since previous submission.
K. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
L. Submittals not requested will not be recognized or processed.

1.4 PROPOSED PRODUCTS LIST

A. Within 15 work days after date of Notice to Proceed, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.5 PRODUCT DATA

A. Product Data for Review:
   1. Submit to Engineer for review for purpose of checking for conformance with information given and design concept expressed in Contract Documents.
   2. After review, provide copies and distribute per Submittal Procedures article above and for record documents purposes described in Section 01 78 00 – Closeout Submittals.
B. Product Data for Information:
   1. Submittal for Engineer's knowledge as contract administrator or for Owner.
C. Product Data for Project Close-out:
   1. Submit for Owner's benefit during and after project completion.
D. Submit number of copies required by Contractor/CM plus two copies for transmittal to Engineer and two copies for transmittal to Owner's Project Manager.
E. Mark each copy to identify applicable products, models, options, and other data.
G. Supplement manufacturers' standard data to provide information unique to project.
H. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
I. After review, distribute in accord with Submittal Procedures article above and provide copies for record documents described in Section 01 78 00 - Closeout Documents.

1.6 CONSTRUCTION SUBMITTALS

A. Submit one copy of Building Permit, Site Permits, Environmental Permits, or other permits required for construction of work.
B. Submit Payment Applications to Engineer for review for purpose of checking conformance with information given and design concept expressed in Contract Documents.
C. Shop Drawings: Provide following information:
   1. Fabrication and installation Drawings and details.
   2. Template placement diagrams.
   3. Manufacturer's installation instructions.

4. Product patterns and colors.
5. Coordination Drawings.
6. Schedules.
7. Product product mix formulae.
8. Product design or engineering calculations.
9. Other information as required by project.
10. After review, produce copies and distribute per Submittal Procedures article above and for record documents purposes described in Section 01 78 00 – Closeout Submittals.
11. Submit to Engineer for purpose of checking conformance with information given and design concept and Owner's Project Manager.

D. Project Closeout Documents:
   1. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
   2. Submit number of copies required by Contractor, plus one copy for Engineer and two copies for Owner.
   3. Submit to Engineer for Owner's benefit during and after project completion.
      a. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
      b. Submit one copy and one reproducible copy required by Contractor/CM, plus one copy for Engineer and two copies for Owner.

E. Product Samples
   1. Submit to Engineer for purpose of checking conformance with information given and design concept expressed in the documents.
   2. After review, Engineer shall submit color board to Owner's Project Manager per Submittal Procedures.
   3. Sample finishes and colors shall be from full range of manufactures' standard colors, textures, and patterns for Engineer's selection and preparation of color board for Owner's approval.
   4. After review and approval by Owner, provide duplicates and distribute per Submittal Procedures.
   5. Submit samples to illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
   6. Include identification on each sample, with full project information.
      a. Submit number of samples specified in specification, one of which Engineer shall retain.
      b. Reviewed samples may be used in work, if indicated.

F. Product Design Data and Test Reports:
   1. Submit to Engineer as contract administrator and for Owner's Project Manager for purpose of checking conformance with information given and completed work on project.

G. Certificates:
   1. When specified, submit certification by manufacturer, installation/application subcontractor, or contractor to Engineer, in quantities specified for Product Data.
   2. Indicate material or Product conforms to or exceeds specified requirements.
   3. Submit supporting reference date, affidavits, and certifications as appropriate.
   4. Certificates may be recent or previous test results on material or Product, but must be acceptable to Engineer.

H. Manufacturer's Instructions:
   1. When specified, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to Engineer for delivery to Owner in quantities specified for Product Data.

2. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
3. Refer to Section 01 45 00 – Quality Control for quality assurance requirements.

J. Manufacturer's Field Reports:
1. Submit reports to Engineer and Owner's Project Manager.
2. Submit report within 30 days of observation to Engineer.
3. Submit for information for purpose of assessing conformance with information given and design concept expressed in Documents.

K. Erection Drawings:
1. Submit drawings to Engineer and Owner's Project Manager.
2. Submit for information for purpose of assessing conformance with information given and design concept expressed in Documents.
3. Data indicating inappropriate or unacceptable work is subject to rejection by Engineer or Owner.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01 35 53
SECURITY PROCEDURES

PART 1GENERAL

1.1 SCOPE OF WORK

A. Development of site security program, project entry control procedures, personnel screening and identification in compliance with Florida Statute FS1012.465 – Jessica Lunsford Act for vendors, and Contractor/CM's.

1.2 RELATED SECTIONS

A. Section 01 31 00 – Project Management and Coordination.
B. Section 01 33 00 – Submittal Procedures.
C. Section 01 56 00 – Temporary Barriers and Enclosures.

1.3 JESSICA LUNSFORD ACT

A. Contractor/CM, his subcontractors, vendors and suppliers who are to be permitted access to school grounds while students are present, or have direct contact with students or have access to or control of school funds shall obtain Level 2 background screening in accord with Florida Statute FS1012.465 – Jessica Lunsford Act.
    1. Level 2 screening excludes personnel working on school district property where students are present who have criminal records that include sexual offender, sexual misconduct with developmentally disabled or mental heath patients, terrorism, murder, kidnapping, lewd, lascivious or indecent acts or exposure, incest, child abuse or neglect.
    2. Persons screened as noted above with other types of criminal history may be allowed on school grounds provided under following conditions:
        a. Contractor/CM, subcontractors, vendors and suppliers shall be under continuous direct supervision of school district employee or Level 2 screened and cleared employee as noted above.
        b. Contractor/CM, subcontractors, vendors and suppliers may be allowed on a student occupied site if area of construction is isolated from students by continuous six foot high chain link fence separating work area and school.
        c. Persons with current Level 2 clearance who are subsequently arrested for disqualifying offenses shall be disqualified from access to school sites and shall immediately surrender their Photo ID Badge to their employer who shall be responsible for returning badge to Martin County School District's Department of Human Resources with 48 hours of arrest or notice of arrest or criminal offense.
        d. Persons failing to notify their employer and Martin County School District's Department of Human Resources with 48 hours of arrest will be charged with 3rd degree felony, punishable by up to five years imprisonment and $1,000 fine.
        e. Employers of persons having been arrested for disqualifying offenses who subsequently allows said employee to continue working on school property may also be charged with 3rd degree felony, punishable by up to five years imprisonment and $1,000 fine.
B. Contractor/CM, his subcontractors, vendors and suppliers working on school board sites shall be fingerprinted and obtain work badges.
    1. Contractor/CM, his subcontractors, vendors and suppliers have worked and obtained in other school districts must be screened to obtain new badges.

2. Questions regarding fingerprinting or identification badge processing may be directed to District Personnel Department at (772)219-1200, Ext. 30296.
3. Fingerprinting services are provided by private vendor through Florida Dept. of Education. DOE sponsored website will direct individuals to nearest fingerprinting location.
4. Cost of fingerprinting is (Check with the School District) per person and shall be prepaid either by money order to (Check with the School District) or by credit card payment via Internet. Website is http://www.flprints.com. For information, telephone (877) 357-7456.
5. Money orders shall be made out to 3M Cogent. Money order must be brought to appointment.
6. Individuals shall register online prior to their appointment:
   a. Navigate to https://www.cogentid.com/fl/index_fdoe.htm and select "register online".
   b. For County select Martin County from pull-down box.
   c. For CRI Literal select: FL931392Z Contractors & Vendors.
   d. Fill out remaining information and submit.
   e. Use Internet Explorer.
7. Individuals being fingerprinted shall provide valid, government issued driver's license, identification card or passport.
8. After fingerprinting and criminal background check is complete, individuals shall make appointment for photo ID's by making appointments at Martin County School District Personnel Department located in Building 20 at School District Administration Center, 500 E. Ocean Blvd., Stuart, FL 34994.
9. Appointments for ID photo badges shall be made after completion of fingerprinting with. Martin County School District Personnel Department by phone at (772) 219-1200, Ext. 30296
10. Photo ID applicants shall have registration confirmation receipt with them when they arrive for appointment.
11. Cost of Photo ID's is (Check with the School District). Payment may be made with company check, money order or personal check. Checks shall be made payable to Martin County School District.

C. Non-Instructional Contractors with current Martin County School District ID Photo Badges shall update their badges to the State Uniform Badge required by Florida Statute 1012.467, effective July 1, 2014.
   1. There is no cost for individuals with current Martin County School District ID Photo Badges to upgrade their badges.
   2. Badges from other individual School Districts are no longer accepted on school sites in Florida.
   3. New state wide badges are accepted in any School District regardless of where it was issued.
   4. Non-Instructional Contractors and their employees working on School sites shall apply for State-Wide Badges as noted above.
   5. Non-Instructional Contractors shall submit lists of their badged employees via email to Eileen Loreti at the Martin County School District Personnel Department at loretie@martin.k12.fl.us.

1.4 SECURITY PROGRAM

A. Protect new work, existing facilities and grounds from damage, theft, vandalism, and unauthorized entry.
B. Initiate security program in coordination with Owner's existing security system at time of project mobilization to ensure safety of students, faculty and visitors to the unaffected portions of the school facilities.

C. No student contact is permitted between the Contractor's personnel and students. Any breach of this requirement will result in the immediate removal of the personnel from the job site upon direction by the Owner.
D. Smoking is not allowed on School Board property. Any breach of this restriction will result in immediate removal of personnel from the site upon direction by Owner's Project Manager.
E. Maintain security program throughout construction period until Owner's project acceptance.

1.5 ENTRY CONTROL

A. Restrict entrance of persons and vehicles into Project site and existing facilities as indicated by Owner approved security plan.
   1. Allow entrance only to authorized persons with proper identification.
   2. Maintain log of workers and visitors, make available to Owner on request.
   3. Coordinate access of Owner's personnel to site in coordination with Owner's security forces.

1.6 PERSONNEL IDENTIFICATION

A. Contractor/CM on-site staff, subcontractors and vendors on site shall wear identification badges at all times on site.
B. Identification badges shall be current at time of project and shall be reverified and reissued yearly if project extends past original badge expiration date.

1.7 SUBMITTALS

A. Comply with Section 01 33 00 – Submittal Procedures.
B. Provide list of personnel proposed to be used on project for fingerprinting and background checks (only required for existing school projects).
C. Contractor/CM shall submit initial list of accredited persons and provide monthly updated lists to Owner.
D. Provide security plan to Owner indicating how construction site is to be secured and separated from existing school and its operations including normal and emergency egress and exiting from the operational portion of school and for new additions and existing portion under construction.

PART 2 PRODUCTS

2.1 Not Used.

PART 3 EXECUTION

3.1 Not Used.

END OF SECTION

SECTION 01 42 00
REFERENCE STANDARDS

PART 1 GENERAL

1.1 REFERENCE STANDARDS

A. Reference and design standards referenced in Florida Building Code and Florida Fire Prevention Code, 6th Editions are applicable.
B. Documents listed shall be standard references currently in effect at time of project building permitting.
C. American Society of Testing Materials (ASTM):
   1. See individual product specification sections for applicable ASTM standards.
D. American National Standards Institute (ANSI)/Underwriters Laboratories (UL):
   1. See individual product specification sections for applicable ANSI standards.
E. Underwriters Laboratories (UL) - Fire Resistance Directory.
F. Warnock-Hersey - Product Directory.
G. Building Industry Consulting Services International (BICSI):
   1. BICSI-568-2001: Installing Commercial Building Telecommunications Cabling.
   2. BICSI Telecommunications Distribution Methods Manual (TDMM).
   3. BICSI Telecommunications Cabling Installation Manual (TCIM).
   4. BICSI Outside Plant Design Reference Manual, 5th Edition.
H FCC (Federal Communications Commission) Rules.
I. National Electrical Code (NEC):
   1. NFPA 70 National Electrical Code, 2008 Edition.
J. National Fire Protection Association (NFPA):
   1. NFPA 101: Life Safety Code - National Fire Protection Association (NFPA).
   2. NFPA 70: National Electrical Code - National Fire Protection Association (NFPA).
K. Occupational Health and Safety (OSHA): State and Federal Requirements.
L. Telecommunications Industry Association (TIA)/Electronics Industry Association (EIA):
   1. TIA/EIA-568-B.1 and addenda: Commercial Building. Telecommunications Cabling Standard - Part 1: General Requirements.
   2. TIA/EIA-568-B.2 and addenda: Commercial Building Telecommunications Cabling Standard - Part 2: Balanced Twisted-Pair.
   3. TIA/EIA-568-B.2-1: Transmission Performance Specifications for 4-Pair 100 Ohm Category 6 Cabling.
   4. TIA/EIA-568-B.3 and addenda: Commercial Building Telecommunications Cabling Standard - Part 3: Optical Fiber Cabling and Components Standard.
   5. TIA/EIA-568-B.3-1: Additional Transmission Performance Specifications for 50/125 ohm Optical Fiber Cables.
   6. TIA/EIA-569-A and Addenda: Commercial Building Standard for Telecommunications Pathways and Spaces, CSA T530.
   7. TIA/EIA-606-A and Addenda: Administration Standard for Telecommunications Infrastructure of Commercial Buildings, CSA T528.
   8. ANSI-J-STD-607-A and Addenda: Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications, CSA T530.
   9. TIA/EIA-526-7 and Addenda: Measurement of Optical Power Loss of Installed Single-Mode Fiber Cable Plant.
   10. TIA/EIA-526-14A and Addenda: Optical Power Loss Measurements of Installed Multimode Fiber Cable Plant.
   11. TIA/EIA-758: Customer Owned Outside Plant Telecommunications Cabling Standard.

M. International Electrical Code (IEC):
   1. TR3 61000-5-2 - Ed. 1.0 and amendments: Electromagnetic compatibility (EMC) - Part 5: Installation and mitigation guidelines – Section 2: Earthing and Cabling".
   2. ISO/IEC 11801: 2000 Edition, 1.2 and amendments: Information Technology – Generic cabling for customer premises.
N. International Standards Organization (ISO/IEC): 11801: 2000 Ed. 1.2 and amendments: Information technology - Generic cabling for customer premises.
O. NACE (National Association of Corrosion Engineers) - Industrial Maintenance Painting.
P. NPCA (National Paint and Coatings Association) - Guide to U.S. Government Paint Specifications.
Q. PDCA (Painting and Decorating Contractors of America) - Painting - Architectural Specifications Manual.
R. SSPC (Steel Structures Painting Council) - Steel Structures Painting Manual.
   1. SSPC-SP 1 – Solvent Cleaning.
   2. SSPC-SP 2 – Hand Tool Cleaning.
   3. SSPC-SP 3 – Power Tool Cleaning.
   4. SSPC-SP 13 – Nace No 6 Surface Preparation for Concrete.
S. WDMA (Window and Door Manufacturer's Association) I.S. 1-A-2004.

1.2 DEFINITIONS

A. Communication Definitions:
   1. ITS: Information Transport System: Copper cabling or optical fiber for transmission of information on School District property. Transmission includes data, video, voice, fire alarm, security, access control, and other low-voltage networks. Information Transport System is not limited to School District-owned cabling, but includes copper and optical fiber, and equipment owned by outside providers carrying School District's information. Pathways are not limited by School District's ownership, but include those owned by third parties. Information Transport System may be referred to as "the network" within project documents.
   2. ICP: Inside Cable Plant: Part of Information Transport System running within buildings. ICP elements include workstation outlet assembly, cabling to the workstation from network rooms, backbone cabling within building, backbone cabling running between physically contiguous buildings, network racks and hardware (routers, switches, hubs, firewalls, etc.), patch panels, punch blocks, fiber distribution panels, patch cords, and cross-connect cables/wires.
   3. OCP: Outside Cable Plant: Part of Information Transport System running between buildings, from building to definable exterior point, between definable exterior points, or from non-School District source to School District building or definable exterior point. OCP includes termination punch blocks, fiber distribution panels, interior splices for outside to inside optical fiber transition, and other initial device into which outside cable attaches. OCP does not include backbone cable running between physically contiguous buildings unless cabling enters OSP pathway element (e.g. OSP conduits, maintenance holes, etc.). OCP includes underground cabling and aerial cabling.
   4. Cable: An assembly of one or more insulated conductors or optical fibers, within an enveloping sheath.
   5. DP: Dead pairs: Unused copper pairs terminating within splice case, but without being splices to outgoing cable.
   6. GP: Grounding electrode: Conductor (rod, pipe or plate or group of conductors) in direct contact with earth for purpose of providing low-impedance connection to earth.

7. GEC: Grounding electrode conductor: Conductor used to connect grounding electrode to equipment grounding conductor, or to grounded conductor of circuit at service equipment, or at source of separately derived system.
8. Handbox: Rectangular or square underground pathway element similar to small maintenance hole, which cannot be fully entered, that allows for pulling point or splice point in power, security or communications pathway.
9. Handhole: A round underground pathway element similar to a handbox, which cannot be fully entered, that allows for a pulling point in a pathway.
10. Identifier: An item of information that links a specific element of the Information Transport System infrastructure with its corresponding record.
11. Infrastructure (Information Transport System): A collection of those Information Transport System components, excluding equipment, that together provides the basic support for the distribution of all information within a building or campus.
12. Linkage: A connection between a record and an identifier or between records.
13. Maintenance (man) holes: Underground pathway element large enough for person to fully enter work, used to provide access to underground cable to pull, splice, and maintain.
14. Media (Information Transport System): Wire, cable, or conductors used for Information Transport System.
15. OB: Outlet box: Metallic or nonmetallic box used to hold Information Transport System outlets/connectors or transition devices.
16. Outlet (Connector) (Information Transport System): Connecting device in work area on which horizontal cable or outlet cable terminates.
17. Pathway: Facility for the placement of Information Transport System cable.
18. Record: Collection of detailed information related to specific element of Information Transport System infrastructure.
19. Report: Presentation of collection of information from various records.
20. Space (Information Transport System): Area used for housing installation and termination of Information Transport System equipment and cable, e.g., equipment rooms, network rooms, work areas, and maintenance holes/handboxes/handholes.
21. Splice: Joining of conductors in splice closure, meant to be permanent.
22. Splice box: Box, located in pathway run, intended to house cable splice.
23. Splice closure: Device used to protect splice.
24. Termination position: Discrete element of termination hardware where information Transport System conductors are terminated.
25. Work Area (work station): Building space where occupants interact with Information Transport System terminal equipment.

B. Painting Definitions:
   1. ASTM D16 - Definitions of Terms Relating to Paint, Varnish, Lacquer, and Related Products for interpretation of terms used herein.

1.3 ABBREVIATIONS AND ACRONYMS

A. Abbreviations noted in Florida Building Code, Chapter 2 are applicable.
B. General Abbreviations:
   1. AC: Above Counter/Air Conditioning.
   2. ACR: Attenuation-to-Crosstalk Ratio.
   3. ADA: Americans with Disabilities Act.
   4. AFF: Above finished floor.
   5. AFG: Above finished grade.
   6. ANSI: American National Standards Institute.

7. ARCH: Architect or Architectural.
8. ASTM: American Society for Testing and Materials (ASTM International).
9. AWG: American Wire Gauge.
10. BD: Building distributor (replacing main-cross connect and MDF as “building service” room identifiers).
11. BICSI®: Building Industry Consulting Service International, Inc.
12. BTU: British Thermal Unit.
13. CAT6: Category 6 cable.
14. CATV: Community Antenna Television (cable television).
15. CD: Campus distributor (replacing main-cross connect and MDF as “campus-wide service” room identifiers). Also, compact disk for storage of audio or video information.
16. CO: Communications Outlet.
17. COAX: Coaxial Cable.
18. CP: Communications Panel.
19. dB: Decibel.
20. EMS: Energy Management System or Emergency Management System.
21. EMT: Electrical metallic tubing.
22. ENT: Electrical nonmetallic tubing.
23. EDPM: Ethylene-polypropylene-diene membrane.
24. EF: Entrance Facility.
25. EIA: Electronic Industries Alliance.
26. ELFEXT: Equal Level Far-End Crosstalk.
27. EMC: Electromagnetic Compatibility.
28. EMI: Electromagnetic Interference.
29. ER: Equipment Room. Replacing “TR”
30. FMC: Flexible metallic conduit.
31. FCC: Federal Communications Commission.
32. FD: Floor distributor (replacing network room, intermediate and horizontal cross-connect, and telecommunications as “building service” room identifiers). Also, Floor Drain as part of building plumbing system.
33. FDDI: Fiber Distribution Data Interface.
34. FEXT: Far-End Crosstalk.
35. FO: Fiber Optic.
36. Freq: Frequency.
37. GE: Grounding equalizer (replacing TBBIBC).
38. Gnd: Ground.
39. HB: Handbox. Also, hose bibb for water supply part of plumbing system.
40. HC: Horizontal Cross-Connect (replaced by floor distributor “FD”).
41. HH: Handhole.
42. HVAC: Heating, Ventilation, and Air Conditioning.
43. Hz: Hertz.
44. IC: Intermediate Cross-Connect (replaced by building distributor “BD”).
45. IDC: Insulation Displacement Connectors.
46. IDF: Intermediate Distribution Frame (replaced by “BD” or “FD”).
47. IEEE: Institute of Electrical and Electronics Engineers.
48. IMC: Intermediate metal conduit.
49. IN: Inches.
50. ISO: International Organization for Standardization.
51. ISP: Inside Cable Plant.
52. JB: Junction Box.
53. LBS: Pounds.

54. LED: Light Emitting Diode.
55. LFMC: Liquidtight flexible metal conduit.
56. LFNC: Liquidtight flexible nonmetallic conduit.
57. Mbps: Megabits per second.
58. MC: Main Cross-Connect (replaced by campus distributor “CD”).
59. MDF: Main Distribution Frame (replaced by “CD” or “BD”).
60. MER: Main Equipment Room.
61. MH: Maintenance Hole.
62. MHz: Megahertz.
63. NBR: Acrylonitrile-butadiene rubber.
64. NEC: National Electrical Code, NFPA 70.
65. NEMA: National Electrical Manufacturers Association.
66. NESC: National Electric Safety Code, C2-1997.
67. NFPA: National Fire Protection Association.
68. NIC: Not in Contract.
69. NR: Network Room.
70. #: Number.
71. OFCI: Owner Furnished Contractor Installed.
72. OFOI: Owner Furnished Owner Installed.
73. OSHA: Occupational Safety and Health Administration.
74. OCP: Outside Cable Plant.
75. OTDR: Optical Time Domain Reflectometer.
76. PR: Pair.
77. PVC: Polyvinyl Cloride.
78. RCDD®: Registered Communications Distribution Designer.
79. RFI: Radio Frequency Interference.
80. RGC or GRC: Rigid Galvanized Conduit.
81. RH: Relative Humidity.
82. RNC: Rigid nonmetallic conduit.
83. SCS: Structured Cabling System.
84. SS: Stainless Steel.
85. SM: Single Mode.
86. TIA/EIA: Telecommunications Industry Association/Electronic Industry Association.
87. TBB: Telecommunication Bonding Backbone.
88. TBBIBC: Telecommunication Bonding Backbone Interconnecting Bonding Conductor (replaced by grounding equalizer “GE”).
89. TE: Telephone Equipment (Wall Mounted Equipment Rack).
90. TEL: Telephone.
91. TGB: Telecommunications Grounding Buss bar.
92. TMGB: Telecommunications Main Grounding Buss bar.
93. TR: Telecommunications Room. (Replaced with Main-MDF or Intermediate-IDF Distribution Frame Locations).
94. TYP: Typical.
95. UL: Underwriters Laboratory.
96. UPS: Uninterruptible Power Supply.
97. UTP: Unshielded Twisted Pair.
98. V: Volt.
99. WAO: Work Area Outlet.

1.4 UNITS OF MEASURE

A. Weights and Measures shall be as identified by Weights and Measures Division, NIST, U. S. Department of Commerce, 100 Bureau Dr., Stop 2600, Gaithersburg, MD 20899-2600.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 45 00
QUALITY CONTROL

PART 1 GENERAL

1.1 SCOPE OF WORK

A. Quality assurance procedures to control labor and product installation including tolerances, adherence to references and standards.
B. Construction of mockups and field samples to set standard of quality for product installation.
C. Independent inspecting and testing laboratory services for quality control and adherence to contract documents.
D. Manufacturers' field services for quality control and adherence to contract documents.
E. Work shall be in conformance with 2007 Edition of AIA A201 General Conditions of the Contract and as amended by Owner on July 13, 2009. Copy is included in Division 1, Section 00 72 00 – General Conditions.

1.2 RELATED SECTIONS

A. Section 01 22 00 – Unit Prices.
B. Section 01 29 00 – Payment Procedures.
C. Section 01 31 00 – Project Management and Coordination.
D. Section 01 33 00 – Submittal Procedures.
E. Section 01 42 00 – References.
F. Section 01 66 00 – Product Storage and Handling Requirements.
G. Section 01 78 00 – Closeout Submittals.
H. Section 01 91 00 – Commissioning.
I. Section 23 05 93 – Testing, Adjusting and Balancing of HVAC.
J. Section 23 08 00 – Commissioning of HVAC.

1.3 COORDINATION AND PROJECT CONDITIONS

A. Coordinate scheduling, submittals, and work to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
C. Coordinate space requirements, supports and installation of mechanical and electrical work that is indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel or perpendicular with line of building. Conduits and piping shall be spaced neatly, consistently and uniformly when in groupings. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
D. In finished areas, except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
E. Coordinate completion and clean up of Work of separate sections in preparation for Substantial Completion and for portions of Work designated for Owner's partial occupancy.
F. After Owner occupancy of premises, coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

G. Owner will not consider change orders for extra work required by Contractor/CM due to improper or untimely coordination.

1.4 FIELD ENGINEERING

A. Employ a Land Surveyor registered in the State of Florida, acceptable to Architect and Owner for construction layout.
B. Contractor/CM shall locate and protect survey control and reference points.
C. Control datum for survey is that established by Owner provided survey.
D. Verify setbacks and easements; confirm drawing dimensions and elevations.
E. Provide field engineering services. Establish elevations, lines, and levels, utilizing recognized engineering survey practices.
F. Upon completion of project, surveyor noted above, shall prepare and submit copy of site drawing and certificate signed by Land Surveyor that elevations and locations of Work are in accord with Contract Documents.

1.5 QUALITY ASSURANCE

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
B. Comply fully with manufacturers' instructions, including each step in sequence.
C. Should manufacturers' instructions conflict with contract documents, request clarification from Architect before proceeding, and document any instructions or directions that may invalidate warranty.
D. Comply with specified standards as a minimum quality for work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
E. Perform work by persons qualified to produce workmanship of specified quality.
F. Verify that field measurements are as indicated on shop drawings or as instructed by manufacturer.
G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.
H. Schedule work so no absorbent materials are installed and no concealed areas are closed up until building is dried-in and permanent doors and windows are installed to prevent development of mold or entrapment of mold or moisture inside concealed spaces or moisture absorption into interior materials.
I. See Section 01 31 00 – Project Management and Coordination for services of Florida licensed land surveyor to verify locations and elevation of floor slabs after floor slab placement and before continuation of construction activities.

1.6 TOLERANCES:

A. Monitor fabrication and installation tolerance control of products to produce acceptable work. Do not permit tolerances to accumulate.
B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with contract documents, most stringent tolerance shall prevail.
C. Adjust products to appropriate dimensions; position before securing products in place.

1.7 REFERENCES AND STANDARDS:

A. Comply with Section 01 42 00 – References for reference standards, definitions, abbreviations and acronyms applicable to project.
B. Workmanship shall comply with requirements of standards specified by product or trade association, or other consensus standards of specified products, except when applicable code requirements are more stringent.
C. Use current reference standard(s) in effect at time of contract execution.
D. Obtain copies of standards where required by product specification sections.
E. Contractual relationships, duties, nor responsibilities of parties in Contract nor those of Architect shall be altered from contract documents by mention or inference otherwise in reference documents.

1.8 MOCKUPS AND FIELD STANDARDS:

A. Comply with Section 01 43 39 – Mockups general requirements and individual product sections for specific requirements. Construct mockups as indicated for review by Architect and Owner's Project Manager.
B. Assemble and erect specified items with required attachment and anchorage devices, flashings, seals, and finishes.
C. Accepted mock-ups shall be basis of work quality standard for work.
D. Where Architect accepts mockups as quality standard of work required, maintain mockups until work is complete.
E. Upon Architect's approval mockups and work samples may be incorporated in completed work. Otherwise, remove mock-up and clear area.

1.9 TESTING SERVICES:

A. Owner will appoint and pay for services specified for independent firm to perform testing.
B. Independent firm will perform tests and other specified services as outlined in individual specification sections and as required by Owner.
C. Testing and quality control may occur on or off project site.
D. Independent firm shall submit reports to Owner and Architect and Contractor/CM, indicating observations and results of tests and compliance or non-compliance with contract documents.
E. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools, storage, safe access, and assistance by incidental labor as requested.
    a. Notify Owner, Architect and independent firm 24 hours prior to expected time for operations requiring services.
    b. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.
    c. Testing does not relieve Contractor to perform work per contract requirements.
    d. As directed by Architect, independent testing firm shall re-test as result of non-conformance with requirements. Contractor shall pay for re-testing cost by deducting testing charges from the Contract Sum/Price.

1.10 BUILDING INSPECTION SERVICES:

A. Owner will employ in-house Building Official, or hire independent Building Official and Construction Inspectors as required to perform Document review and approval, and on-site building inspections in accord with Florida Building Code, Section 423 State Requirements for Educational Facilities and other applicable codes.
B. Building Official and Inspectors will perform code interpretation, document review, project inspections, and other services specified and required in individual specification sections, and shall be paid by Owner.
C. Inspections firm will conduct inspections and observations of work, indicate compliance or non-compliance with applicable codes and contract documents, and will submit reports to Architect, Contractor/CM and Owner.
D. Cooperate with inspection firm; provide safe access and assistance by incidental labor as requested.
E. Notify Owner and Architect and inspection firm 24 hours prior to expected time for operations requiring services.
F. Inspection of work does not relieve Contractor of performing work in accord with contract requirements.

1.11 MANUFACTURERS' FIELD SERVICES:

A. Where specified, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment and as applicable, and to initiate instructions when necessary.
B. Submit qualifications of observer to the Architect 30 days in advance of required observations, the observer is subject to Owner's approval.
C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
D. Comply with Section 01 33 00 – Submittal Procedures.

1.12 COMMISSIONING

A. Comply with Section 01 91 00 – Commissioning for training of Owner’s personnel in operation and maintenance of equipment identified in this Section.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 EXAMINATION:

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work, beginning new work means acceptance of existing conditions.
B. Verify that existing substrate is capable of structural support or attachment of new work.
C. Examine and verify specific conditions described in individual specification sections. Immediately notify AE or Owner’s Project Manager of conditions that would prevent meeting contractual requirements.
D. Verify that utility services are available, of correct characteristics, and in correct locations.

3.2 PREPARATION:

A. Clean substrate surfaces prior to applying next material or substance.
B. Seal cracks or openings of substrate prior to applying next material or substance in manner approved by product manufacturer.
C. Apply manufacturer's required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.3 CLEANING AND WASTE MANAGEMENT

A. Comply with Section 01 74 00 – Cleaning and Waste Management.

END OF SECTION

SECTION 01 66 00
PRODUCT STORAGE AND HANDLING REQUIREMENTS

PART 1GENERAL

1.1 SCOPE OF WORK

A. Packaging and transportation, delivery and receiving, product handling, storage, conditions and location, maintenance, protection, repair and replacement of products damaged while handling or in storage.

1.2 RELATED DOCUMENTS

A Section 01 31 00 – Project Management and Coordination.
B. Section 01 33 00 – Submittal Procedures.
C. Section 01 35 53 – Security Procedures.
D. Section 01 45 00 – Quality Control.

PART 2PRODUCTS (NOT USED)

PART 3EXECUTION

3.1 TRANSPORTATION AND HANDLING

A. Packaging and Transportation:
   1. Supplier shall package finished products in boxes or crates to provide protection during shipment, handling and storage at site.
   2. Products shall be protected against exposure to outside storage against damage due to weather conditions.
   3. Protect products sensitive to damage against impact, abrasion, puncture and other damage during handling and transport to project.

3.2 DELIVERY AND RECEIVING

A. Arrange deliveries of products in accord with project schedule to allow installation and project completion per approved project schedule.
B. Prior to project commencement, Contractor's personnel shall meet with Owner's Project Manager and School staff for renovation and new construction to delineate areas for materials storage lay-down areas.
C. Restrict access of persons to storage areas in accord with Section 01 35 33 – Security Procedures.
D. Material deliveries to Owner occupied sites shall be coordinated with Owner's Project Manager to ensure availability of personnel and handling equipment for safe and secure unloading and storage of equipment.
E. Deliver products in undamaged, dry condition, in original unopened containers or packaging with identifying labels intact and legible.
F. Clearly mark partial deliveries of component parts of equipment to identify equipment and contents, to permit easy accumulation of parts, and to facilitate assembly.
G. Upon delivery, Contractor/CM shall inspect shipments for following items:
   1. Products received match reviewed submittals and Contract Documents.
   2. Correct quantities.

3. Accessories and installation hardware are included.
4. Containers and packages are intact and labels are legible.
5. Products are adequately protected for conditions and are undamaged.

H. Product Handling:
1. Provide equipment and personnel to handle products to prevent product damage.
2. Handle products to avoid bending, flexing or overstressing.
3. Lift large or heavy components by using designated lifting points in accord with manufacturers written directions.

3.3 STORAGE AND PROTECTION

A. General Requirements:
1. Store products immediately upon delivery in accord with manufacturers written directions.
2. Arrange for storage location to allow access, maintenance and inspection of products.
3. Stored products shall not conflict with work conditions. construction is contiguous to or within existing school, Provide demising walls to physically separate new or renovation work from existing on-going school operations.

B. Enclosed Storage:
1. Store products subject to damage by weather in weathertight enclosure.
2. Maintain temperature and humidity within ranges stated in manufacturer's instructions.
4. Provide temperature and humidity control within ranges stated in manufacturer's instructions.
5. Store unpacked or loose products on shelves, in bins, or in neat groups of like items.

C. Exterior Storage:
1. Provide platforms, blocking or skids to support fabricated products above ground, and sloped to allow drainage.
2. Protect products to avoid soiling or staining.
3. Provide product cover to prevent water or condensation on product while allowing ventilation.
4. Store loose granular materials on clean, solid surfaces such as pavement or on rigid sheet materials to prevent mixing with foreign matter.
5. Provide for surface drainage to prevent humidity, mold or algae growth.

D. Maintenance of Storage:
1. Periodically inspect stored products on scheduled basis.
2. Verify storage facilities and environmental conditions are in compliance with manufacturer's written requirements.
3. Verify that product surfaces exposed to weather are undamaged, stolen, or have otherwise been adversely affected.

E. Maintenance of Equipment Storage:
1. Stored mechanical and electrical equipment shall comply with manufacturer's written service instructions for each item, with notice of instructions attached to each item of equipment.
2. Stored equipment shall be serviced on regular basis, maintaining log of services, and submitted to Architect in accord with Section 01 78 00 – Submittal Procedures as part of Project Record Documents.

F. Storage of Owner's Salvaged Furnishings and Equipment:
1. Contractor/CM shall provide temporary storage facilities for items to be salvaged and reinstalled.

3.4 PROTECTION OF FINISHED WORK

A. Protect finished surfaces, including doors, door jambs, soffits of openings used as passageways, through which equipment and materials are handled.
B. Protect finished floor surfaces in traffic areas prior to allowing equipment or materials to be moved.
C. Keep finished surfaces clean, unmarked, and suitably protected until Owner's project acceptance.

3.5 REPAIRS AND REPLACEMENTS

A. Promptly replace or repair damaged equipment or building surfaces caused by moving equipment at no additional cost to Owner.

B. Additional time required to repair or replace damaged equipment or building surfaces shall not be grounds for Contract time extension or Contractor's additional expense, unless Owner specifically authorizes time extension or additional costs.

END OF SECTION

SECTION 01 74 00
CLEANING AND WASTE MANAGEMENT

PART 1 GENERAL

1.1 SCOPE OF WORK

A. Administrative and procedural requirements for waste management and cleaning during construction and final cleaning at Substantial Completion.
B. Development and implementation of Waste Management Plan to indicate following procedures:
   1. Limiting amount of project waste through planning, scheduling, and project management.
   2. Recycling demolished structures and construction and waste materials, and reuse of recycled or salvaged materials whenever possible.
   3. Procedures to reduce construction noise, fumes, vibration, dust or other airborne contaminates.
   4. Adherence to Federal, State and local environmental and anti-pollution regulations and ordinances.
   5. Waste materials shall be suitably disposed off site in approved landfill sites.
   6. Development of contamination containment plan to include procedures for addressing volatile and hazardous materials or their waste products, cleaning materials and residue.
C. Cleaning and Protection:
   1. Development of daily and periodic construction cleaning and protection of products stored on site or erected in project, and shall include sequence and frequency policy and schedule for project duration.
   2. Development of evacuation, fire and life safety plan, staff training procedures in handling and disposal of materials deleterious to human contact or exposure.
   3. Final cleaning leaving project ready for Owner's acceptance.

1.2 RELATED SECTIONS

A. Section 01 31 00 – Project Management and Coordination.
B. Section 01 33 00 – Submittal Procedures.
C. Section 01 42 00 – References.
D. Section 01 66 00 – Product Storage and Handling Requirements.
E. Section 01 78 00 – Closeout Submittals.

1.3 SUBMITTALS

A. Comply with Section 01 33 00 – Submittal Procedures.
B. Submit MSDS sheets for products requiring special care or handling in storage, application or cleanup.
C. Submit Waste Management and Cleaning Plans identifying and providing operational procedures for each item noted in Scope of Work.

1.4 COORDINATION

A. Coordinate scheduling and implementation of Waste Management and Cleaning Plans with each trade on site.
B. Ensure enforcement to promote efficient and orderly sequence of installation of interdependent construction elements, with intent to reduce waste maximize efficient and safe work environment.

C. Coordinate periodic and final clean up of Work of each trade in preparation for Substantial Completion and for portions of Work designated for Owner's partial occupancy.

1.5 QUALITY ASSURANCE

A. Monitor each trade, product suppliers, product deliveries, waste generation, site conditions, and workmanship, to minimize waste and maximize recycled materials and reuse of retained materials.

PART 2 PRODUCTS

NOT USED (See individual product specifications for cleaning products recommended by manufacture.)

PART 3 EXECUTION

NOT USED (See individual product specifications for written cleaning procedures and instructions recommended by manufacture.)

END OF SECTION

SECTION 01 78 00
CLOSEOUT SUBMITTALS

PART 1GENERAL

1.1 SCOPE OF WORK

A. Closeout procedures.
B. Final cleaning.
C. Adjusting.
D. Project record documents.
E. Operation and maintenance data.
F. Spare parts and maintenance Products.
G. Warranties and bonds.
H. Maintenance service.
I. Training.

1.2 RELATED SECTIONS

A. Section 01 29 00 - Payment Procedures.
B. Section 01 33 00 – Submittal Procedures.
C. Section 01 91 00 – Commissioning.
D. Section 27 60 00 – Integrated Audio System.

1.3 CLOSEOUT PROCEDURES

A. Submit written certification that contract documents were reviewed, work inspected, and that work is complete in accord with contract documents and ready for Owner's Project Manager and AE's review.
B. Provide submittals to AE and Owner's Project Manager that are required by building and fire authorities.
    1. Submit final application for payment identifying total adjusted contract sum, previous payments, and sum remaining due.
    2. Owner may opt to occupy all or portions of completed facilities upon substantial completion of those portions of work.
    3. Contractor/CM shall provide punch list to AE identifying items remaining to be completed.
    4. AE shall inspect project to determine completion of punch list and project compliance with Contract Documents.

1.4 FINAL CLEANING

A. Execute final cleaning prior to final project assessment.
B. Clean interior and exterior surfaces exposed to view; remove temporary labels, stains and foreign substances.
C. Clean equipment and fixtures to sanitary condition with cleaning materials per manufacturer's written recommendations.
D. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.5 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

1.6 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of record documents, recording accurate field revisions to contract documents to include:
   1. Drawings/specifications and addenda.
   2. Change orders and other modifications to work.
   3. Reviewed shop drawings, product data, and samples.
   4. Manufacturer's instruction for assembly, installation, and adjusting.
B. Ensure entries are complete and accurate, enabling ready access and reference by Owner’s Project Manager.
C. Store record documents separate from documents used for construction.
D. Record information concurrent with construction progress.
E. Specifications shall be legibly marked and recorded for each product used indicating the following:
   1. Manufacturer's name, product model and number.
   2. Product substitutions or alternates utilized.
   3. Changes made by addenda and modifications.
F. Record drawings and shop drawings shall be legibly marked with each item recorded to indicate actual construction as follows”
   1. Measured depths of foundations in relation to finish first floor datum.
   2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
   3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the work.
   4. Field changes of dimension and details.
   5. Details not on original contract drawings.
H. Upon project completion, transfer project record drawing information to Autocad (2010 or later format) files and provide four copies of CD’s to Architect for review and transmitted to Owner, prior to claim for final Application for Payment.
   1. Contractor/CM shall also submit two hard copies of record drawings and project manual maintained during project to Owner’s Project Manager.
   2. Owner will be responsible for making prints from CD’s and for their distribution to Owner’s user groups.

1.7 OPERATION AND MAINTENANCE DATA

A. Submit documentation as noted in individual product specifications and as noted herein.

1.8 SPARE PARTS AND MAINTENANCE PRODUCTS

1. Provide spare parts, maintenance, and extra products in quantities specified in specification.
2. Deliver to Owner; obtain receipt prior to final payment.

1.9 WARRANTIES

A. Submit documentation as noted in individual product specifications and as noted herein.
B. Provide duplicate notarized copies.
C. Execute and assemble transferable warranty documents from subcontractors, suppliers, and manufacturers.
D. Provide Table of Contents and assemble in D-side 3-ring white binders with typed title sheet of contents inside durable plastic front cover.
E. Submit prior to final application for payment.
F. For items of work delayed beyond date of substantial completion, provide updated submittal within ten days after acceptance, listing date of acceptance as start of warranty period.

1.10 MAINTENANCE SERVICE

A. Furnish service and maintenance of components indicated in specification sections for one-year from date of project substantial completion.
B. Examine, clean, adjust, and lubricate system components as required for reliable operation.
C. Include systematic examination, adjustment, and lubrication of components repairing or replacing parts as required with parts produced by the manufacturer of the original component.
D. Owner shall approve in writing of transfers or reassignments of maintenance service tasks.

1.11 ASBESTOS CERTIFICATION

A. Provide notarized letter from Contractor/CM certifying that “to the best of his/her knowledge no asbestos containing building materials were used as a building material in the project”, per FS 255.40.

1.12 PROJECT CLOSE-OUT PROCEDURES

A. Items are to be submitted to the School District’s Construction Manager’s Office once the request for final payment has been submitted.

1. ____ 4 Copies: AIA Application For Payment, Signed and Sealed, Noted as Final Payment.

2. ____ Consent of Surety to make final payment.

3. ____ Release of Lien from all Sub-Contractors or Laborers who have filled an Intent to Lien.

4. ____ Warranty/Guarantee from Construction Manager for one-year from the date of Substantial Completion.

5. ____ Warranty/Guarantee from each Sub-Contractor for one-year from the date of Substantial Completion.

6. ____ Copy of the approval by the Architect-Engineer and the transmittal to the end user of manuals, shop drawings, as-builds, brochures, warranties, list of sub-contractors with phone numbers, addresses and contact persons.

7. ____ Verification that all applicable district personnel have been trained in the operation of their new equipment (per system: HVAC, controls, etc.)

8. ____ Executed Roof Warranty in the name of the Martin County School District.

9. ____ 4 Copies: OEF Form 209, Certificate of Final Inspection.

10. ____ 4 Copies: Completed Punch-list.

11. ____ SREF 4.2(3)(e) Architect's Certificate of Specification of Asbestos Containing Materials.

12. ____ SREF 4.2(3)(e) Contract's Certificate of Asbestos Use.

13. ____ SREF 4.2(3)(d) Threshold inspector's statement that building complies with Threshold Plan.

14. ____ 4 Copies: OEF Form 110B, Certificate of Occupancy.

15. ____ OEF Form 564 for new construction or additions to existing schools only (Return to Director's Secretary)

16. ____ Inspection Log Book

PART 2 PRODUCTS

2.1 APPROVED PRODUCTS

A. Use only cleaning and maintenance products approved for use in Florida Educational Facilities.

PART 3 EXECUTION

3.1 Not used.

END OF SECTION

SECTION 01 91 00
COMMISSIONING

PART 1GENERAL

1.1 SCOPE OF WORK

A. Administrative and procedural requirements for commissioning facilities and facility systems.
B. Demonstration and training.
C. Starting systems.
D. Demonstration and instructions.

1.2 RELATED SECTIONS

A. Section 01 31 00 – Project Coordination.
B. Section 01 78 00 – Closeout Documents.
C. Section 23 05 93 – Testing, Adjusting, and Balancing HVAC.
D. Section 23 08 00 – Commissioning of HVAC.

1.3 STARTING SYSTEMS

A. Coordinate schedule for start-up of various equipment and systems.
B. Notify Architect and Owner seven days prior to startup of each item.
C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, or other conditions which may cause damage.
D. Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
E. Verify wiring and support components for equipment are complete and tested. Execute startup under supervision of responsible Contractors' personnel in accordance with manufacturers' instructions.
F. When specified in individual specification sections, require manufacturer to provide authorized representative to be present at site to inspect, check and approve equipment or system installation prior to startup, and to supervise placing equipment or system in operation.
G. Submit written reports per section 01 78 00 - Execution and Closeout Documents that equipment or system is installed and functioning correctly.

1.4 DEMONSTRATION AND INSTRUCTIONS

A. Demonstrate operation and maintenance of Products to Owner's personnel two weeks prior to date of Substantial Completion.
B. Demonstration of equipment shall be performed by qualified manufacturers' representative who is knowledgeable about the Project and equipment.
C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
D. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owners' personnel in detail to explain all aspects of operation and maintenance.
E. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed-upon times, at equipment location.
F. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

G. Amount of time required for instruction in each piece of equipment and system is indicated in individual equipment and system specification sections.

1.5 TESTING, ADJUSTING, AND BALANCING

A. Contractor/CM shall employ, and pay for commissioning services other than TAB firm to perform testing, adjusting and balancing of other systems as indicated or require for fully functional systems
B. Independent TAB firm shall perform services specified in section 23 05 93 – Testing, Adjusting, and Balancing for HVAC system(s).
C. The Contractor/CM shall submit reports to Architect indicating observations, results of tests and compliance or non-compliance with specified requirements and with requirements of contract documents.

PART 2PRODUCTS

2.1 Not Used.

PART 3EXECUTION

3.1 List of Equipment to be Commissioned:
A. Communications System
B. Fire Alarm System
C. Intercom System
D. Kitchen Equipment
E. HVAC Equipment.
F. Gymnasium Equipment including bleachers, scoreboards, basketball backstops, sound system, playcourt surface, equipment with floor inserts
G. Lighting Systems
H. Stage, Auditorium, Gym and Instructional Spaces Sound Reinforcement Systems
I. Irrigation System
J. Fire Protection System
K. Movable Interior Partitions
L. Emergency Generator

3.2 EQUIPMENT COMMISSIONING REQUIREMENTS

A. Comply with individual specification sections for equipment start-up, operation and training.

END OF SECTION

SECTION 01 91 01
COMMISSIONING OF HVAC

PART 1 GENERAL

1.1 SCOPE OF WORK

A. Independent commissioning of heating, ventilation, and air conditioning in accord with project documents and include:
   1. Evaluate proposed HVAC and electrical systems design and control system documents.
   2. Review and document HVAC and Electrical control interface systems interface.
   3. Coordinate start-up of HVAC and Electrical systems.
   4. Coordinate and review operation, training procedures, demonstration and instructions for HVAC equipment use by Owner.
   5. Review, evaluate and document HVAC equipment operation and performance.

B. Work with TAB contractor for testing, adjusting, and balancing to ensure HVAC system performance is maximized for operational efficiency.

C. Coordinate HVAC Commissioning scheduling and activities with GC/CM.

D. Commissioned Systems Include:
   1. HVAC components and equipment.
   2. HVAC interaction of cooling, heating, and comfort delivery systems.
   3. Building Automation System (BAS): control hardware and software, sequences of operation, and integration of factory controls with BAS.
   4. Plumbing: Domestic hot water systems.
   5. Lighting Control System with interface with daylighting.

1.2 RELATED SECTIONS

A. Section 01 31 00 – Project Coordination.
B. Section 01 33 00 – Submittal Procedures.
C. Section 01 42 00 – References.
D. Section 01 45 00 – Quality Control.
E. Section 01 78 00 – Closeout Submittals.
F. Section 01 91 00 – Commissioning
G. Section 23 05 93 – Testing, Adjusting and Balancing For HVAC.

1.3 REFERENCES

A. See Section 01 42 00 – References for additional reference standards, definitions, abbreviations and acronyms.

B. American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE):
   1. ASHRAE Guideline 0-2005 with Amendments a, b, c & d - The Commissioning Process.
   2. ASHRAE Guideline 1.1-2007, The HVAC Commissioning Process.
   3. ASHRAE 110-95 – An Introduction to Laboratory Fume Hood Performance Testing.

C. NEBB Whole Building Systems Commissioning of New Construction, 2009 (3rd Edition).

D. American National Standards Institute/American Industrial Hygiene Association/American Society of Safety Engineers (ANSI/AIHA/ASSE):
   1. ANSI/AIHA/ASSE Z9.5-2012 – American National Standard for Laboratory Ventilation.

1.4 DEFINITIONS

A. Definition of terms used are as follows:
   1. Acceptance Phase: Phase of construction after initial start-up and check-out when functional performance testing, operational training, and operating and maintenance documentation development and review occurs.
   2. Basis of Design: Documentation of primary thought processes and assumptions for design decisions made to meet Owner's Project Requirements as reflected in construction documents (drawings and specifications). Basis of design describes intent of project, systems, components, conditions, and methods chosen to meet Owner's Project Requirements. Design professionals (Architect and Engineer) are responsible for interpretation of the basis of design.
   3. Commissioning Provider: Independent entity, not otherwise associated with design team or Contractor/CM, who directs and coordinates day-to-day commissioning activities. Commissioning Provider does not have construction oversight or design role.
   4. Commissioning Plan: Overall plan providing structure, schedule, and coordination planning for commissioning process.
   5. Commissioning Team: Group responsible for accomplishing commissioning process.
   6. Data Logging: Monitoring flows, currents, status, and pressures of equipment using stand-alone recording equipment, separate from control system. Additional monitoring may be provided through capabilities of control system.
   7. Deferred Functional Performance Tests: Functional tests performed after date of substantial completion due to partial occupancy, equipment and seasonal testing requirements, design or other site conditions precluding testing of system or piece of equipment during normal commissioning sequence.
   8. Owner's Project Requirements: Documents prepared by Owner providing explanation of concepts, criteria, and work scope critical to Owner’s expectations.
   9. Factory Testing: Testing of equipment at factory (or on-site) by factory personnel in Owner’s representative and commissioning agent’s presence.
   10. Functional Performance Tests: Tests of dynamic function and operation of equipment and systems using manual (direct observation) or monitoring methods. Functional testing is dynamic testing of systems (rather than just components) under full operation. Systems are tested under various modes, such as during low cooling or heating loads, high loads, component failures, unoccupied modes, varying outside air temperatures, fire alarm modes, and power failure. Systems are run through control system’s sequences of operation and components are verified to respond properly. Commissioning Provider develops Functional Performance Test procedures in sequential written form, coordinates, oversees and documents actual testing performed by GC/CM. Functional Performance Tests are performed after Test and Balance, pre-functional checklists and start-up is complete.
   11. Indirect Indicators: Indicators of response or condition, such as reading from control system screen reporting damper to be 100% closed.

12. Manual Tests: Using hand-held instruments, immediate control system read-outs or direct observation to verify performance (contrasted to analyzing monitored data taken over time to make observations.
13. Monitoring: Recording of parameters (flow, current, status, or pressure) of equipment operation using data loggers or trending capabilities of control systems.
14. Over-written Value: Writing over sensor value in control system to determine response of system (e.g., changing outside air temperature value from 50ºF to 75ºF to verify economizer operation). See "Simulated Signal.
15. Owner-contracted Tests: Tests paid by Owner outside GC/CM's contract and for which Commissioning Provider does not oversee. Tests shall not be repeated during functional testing if properly documented.
16. Phased Commissioning: Commissioning completed in phases (by floors, for example) due to size of structure or other scheduling issues, to minimize total construction time.
17. Pre-functional Checklists: Lists of items to inspect and elementary component tests to conduct to verify proper installation of equipment, provided by GC/CM to Commissioning Authority who shall review and approve scope of tests. Pre-functional checklists are primarily static inspections and procedures to prepare equipment or system for initial operation (e.g., belt tension, oil levels, labels affixed, gauges in place, sensors calibrated). Some pre-functional checklist items may entail simple testing of function of components, piece of equipment or systems. Pre-functional refers to testing to be accomplished prior to formal functional testing of installed equipment. Pre-functional checklists augment and may be combined with manufacturer's start-up checklist. GC/CM shall execute checklists.
18. Sampling: Functional Performance Testing of fraction of total number of identical or near identical pieces of equipment. Sampling population is at discretion of commissioning firm, and is subject to modification based upon sampling results (i.e. will be expanded if initial results warrant).
19. Simulated Condition: Condition created for purpose of testing response of system (e.g., blowing hair dryer on space sensor to determine response of variable volume terminal unit).
20. Simulated Signal: Disconnecting sensor and using signal generator to send amperage, resistance or pressure to transducer and control system to simulate sensor value.
21. Start-up: Initial starting or activating of dynamic equipment, including executing pre-functional checklists.
22. Test, Adjust, and Balance: Process of measuring actual flows of air and hydronic systems, adjusting flows to required values, and documenting results.
23. Trending: Monitoring of equipment performance over time, using data logging equipment or building control system.

1.5 QUALITY ASSURANCE

A. Supervision, coordination, and documentation of commissioning process shall be responsibility of Commissioning Provider.

B. Commissioning Provider shall become familiar with Owner's Project Requirements, Basis of Design documentation, project documents, and shall assume responsibility for overall system commissioning effort.

C. Acceptable Commissioning Firms:
1. OCI Associates, Inc., 181 Melody Lane, Ft. Pierce, FL 34905; Tel: 772-465-1165; Fax: 772-466-1134; Website: www.ociassociates.com
2. Johnson, Levinson, Ragan, Davila, Inc., 1450 Centrepark Blvd., Suite 350, West Palm

Beach, FL 33401; Tel: 561-689-2303; Fax: 561-689-2302; Website: www.jlrdinc.com.

3. TLC Engineering, 874 Dixon Blvd., Cocoa, FL 32922; Tel: 321-636-0274; Fax: 321-639-8986; Website: www.tlc-eng.com.

1.6 COORDINATION:

A. Commissioning Provider will be hired by Owner. Commissioning Provider shall direct and coordinate activities of commissioning team.

B. Commissioning team shall consist of Commissioning Provider, Owner, GC/CM, and associated subcontractors.

C. Scheduling: Commissioning Provider shall schedule commissioning activities of and shall coordinate schedule with GC/CM. Commissioning Provider shall generally provide not less than two (2) weeks notice to GC/CM of commissioning activities, except where retesting is required or commissioning activities have been delayed by no fault of commissioning firm.

1.7 COMMISSIONING PROCESS:

A. Commissioning Provider shall develop and coordinate execution of commissioning plan; observe and document installation, check-out, start-up, and equipment and system testing to establish that equipment and systems are functioning in accord with project requirements, and to assist in developing correct and complete documentation of construction effort.

B. Commissioning Provider shall not be responsible for design concept, design criteria, compliance with codes, design, construction scheduling, cost estimating, construction management, or construction supervision.

C. Commissioning Provider may assist design team with problem-solving, or GC/CM with correction of non-conformance items or deficiencies.

D. Commissioning Provider is not responsible for providing tools required to start, check-out and perform functional tests of equipment and systems, except for specified testing with supplemental portable data-loggers, which shall be supplied and installed by Commissioning Provider.

E. Work Required during Construction Phase:

1. Ensure compliance with construction documents, and achieve following objectives:
2. Review the engineer of records basis of design as well as the project design documents and make comments pertaining to the execution of commissioning.
3. Develop commissioning plan and distribute to GC/CM, Owner and Engineer.
4. Coordinate commissioning activities during construction with GC/CM, and ensure that commissioning activities are included in master project schedule.
5. Review submittals applicable to systems being commissioned, including GC/CM proposed detailed start-up procedures, concurrent with Engineer's reviews and provide review comments to Engineer and Owner.
6. Commissioning provider’s review shall be for compliance with commissioning needs, and to aid in development of functional testing procedures and only secondarily to review for compliance with equipment specifications. Design professional remains responsible for interpretation of compliance with contract requirements.
7. Request and review additional information as required to perform assigned commissioning tasks, including review of operations and maintenance materials, and GC/CM’s start-up and check-out procedures.
8. Develop specific Functional Performance Test procedures and forms to document proper operation of equipment and system.

9. Submit proposed functional tests to Engineer for review and general conformance to requirements of contract documents and provide copy of proposed functional performance test procedures to GC/CM who shall review proposed tests for feasibility, safety, equipment and warranty protection.
10. Required performance testing includes control system trending, stand-alone data logger monitoring, or manual logging of system operation to demonstrate proper operation. Functional Performance Test forms shall include following information:
    a. Date.
    b. Project name.
    c. System and equipment or component name(s).
    d. Equipment location and identification number.
    e. Test identification number, and reference to pre-function checklist and start-up documentation identification numbers for each piece of equipment.
    f. Participating parties.
    g. Reference to specification describing specific sequence of operations or parameters being tested or verified.
    h. Formulae used in calculations.
    i. Required pre-test field measurements.
    j. Instructions for setting up test.
    k. Special cautions or alarm limits.
    l. Specific step-by-step procedures to execute test, in clear, sequential, and repeatable format.
    m. Acceptance criteria of proper performance with provisions for clearly indicating whether or not proper performance of each part of test was achieved.
    n. Section for comments.
    o. Signature and date block for Commissioning Provider and participating parties.
11. Review GC/CM start-up and pre-functional testing reports and provide on-site observation of start-up and pre-functional testing as specified herein.
12. Review proposed testing, adjusting, and balancing execution plan for completeness and requirements of commissioning process and provide comments to GC/CM, Engineer, and Owner.
13. Perform site visits, monthly until pre-functional testing of equipment and systems begins, and then weekly throughout Project, to review component and system installations. Concurrently, schedule and conduct commissioning planning and coordination meetings to review construction progress and to assist in resolving discrepancies or issues relating to commissioning process.

F. Acceptance Phase: demonstrate that performance of equipment and systems installed during construction phase meets requirements of construction documents. Notify Owner and Engineer of deficiencies in results or procedures. Commissioning activity shall achieve following objectives:
    1. Coordinate, witness, and approve functional tests of equipment and systems performed by GC/CM. Review functional test reports and analyze trend logs, data logger reports, and other monitoring data to evaluate equipment and system performance.
    2. Document performance of functional testing and provide comparison to required performance, as defined by project documents.
    3. Coordinate retesting as necessary until satisfactory performance is demonstrated.
    4. Maintain master deficiency and resolution log, separate testing record log, and provide written progress reports and test results with recommended corrective actions for observed deficiencies.

5. Compile and submit commissioning report to Owner and Engineer documenting results of the Start-Up, Pre-Functional Performance Testing, and Functional Performance Testing.
6. Review GC/CM's proposed training of Owner's operating personnel, and provide comments to Engineer and Owner.
7. Coordinate and attend GC/CM provided training sessions. Verify approved training has been properly completed.

G. Warranty period: assist Owner in identifying defects in installed equipment or system operation to accomplish following objectives:
1. Review equipment warranties to ensure that Owner's responsibilities are clearly defined.
2. Verify that warranty items have been corrected properly.
3. Coordinate and supervise required seasonal or deferred testing and deficiency corrections, as specified or required by commissioning plan.
4. Return to site, approximately 10 months into warranty period and review with Owner building operation and condition of outstanding issues related to original and seasonal commissioning.
5. Assist Owner in reviewing failure and repair records of equipment during warranty period and in evaluation of GC/CM's corrective actions. Identify areas that may come under warranty or under original construction contract.
6. Interview Owner and identify problems or concerns regarding operating building as originally intended and shall make suggestions for improvements.
7. Assist the Owner in developing reports, documents, and requests for services to remedy outstanding problems.

PART 2 PRODUCTS

2.1 Not Used.

PART 3 EXECUTION

3.1 REPORTING:

A. Provide final commissioning report to Owner with following reports:
1. Copies of periodic commissioning reports.
2. Copies of Pre-Functional Performance Test reports.
3. Copies of Functional Performance Test reports.
4. Copies of the Training Report.

3.2 SYSTEMS TO BE COMMISSIONED:

A. As defined previously herein under item 1.1, F.

3.3 START-UP, PREFUNCTIONAL CHECKLISTS, AND INITIAL CHECK-OUT:

A. GC/CM shall be responsible for initial check-out and pre-functional testing of installed equipment and systems.

B. Commissioning Provider shall monitor activities of parties responsible for executing required start-up, and pre-functional testing, as identified in commissioning plan.

C. Commissioning Provider shall review GC/CM furnished documentation of start-up, initial check-out, and pre-functional test procedures for equipment and systems to ensure that there is written documentation that each manufacturer-recommended procedures has been completed.

D. Observe first pre-functional test procedures for each type and size equipment to ensure that approved procedures are being followed.
   1. For lower-level components of equipment, (e.g., variable volume terminal units, sensors, controllers), observe sampling of pre-functional and start-up procedures.
   2. In no case, shall number of units witnessed be less than 20% of total number of identical or very similar units.

3.4 FUNCTIONAL PERFORMANCE TESTING:

A. Functional Performance Testing of equipment or systems shall be conducted only after pre-functional testing and start-up has been satisfactorily completed. Schedule functional tests with GC/CM. Direct, witness, and document Functional Performance Testing of equipment and systems to be commissioned. GC/CM shall be responsible for execution of Functional Performance Tests.

B. Functional Performance Testing shall demonstrate that each item of equipment and each system is operating according to requirements of construction documents as defined by A/E. Each item of equipment and system undergoing Functional Performance Testing shall be operated through all modes of operation where there is required system response. Verify each action required in sequences of operation has been accomplished according to requirements, or A/E shall revise sequences as deemed appropriate.

C. Functional Performance Testing shall proceed from components to subsystems to systems. When proper performance of interacting individual systems has been achieved, interface or coordinated responses between systems shall be tested.

D. Proper and accurate operation of control system shall be proven by functional testing and approved by Commissioning Provider before it may be used for testing, adjusting and balancing activities or to verify performance of other components or systems. If authorized by Commissioning Provider, portions of control system may be tested and approved before functional testing of the entire system is completed.

E. Air and water balancing shall be completed and corrected as necessary before Functional Performance Testing of air-related or water-related equipment or systems.

F. Test Methods:
   1. Functional Performance Testing and verification shall be achieved by manual testing (direct manipulation of equipment and observation of its response and performance) or by monitoring performance using control system’s trend log capabilities.

2. Functional Performance Test procedures shall specify which methods shall be used for each test. Determine which method is most appropriate for tests that do not have method specified.
3. Commissioning Provider may substitute specified methods or require additional method to be executed, other than that specified, if required to demonstrate proper operation of equipment or system being tested.
4. Develop Functional Performance Testing plans that define allowable sampling procedures and that specify procedures to be followed in case of observed discrepancies or failures in sample chosen for functional testing.
5. AHU operation (leaving air temperature, VFD speed) shall be trend logged with VAV box and air valve flow rates, as well as space temperatures to demonstrate modulation of system components with changing loads, as well as occupied/non-occupied status and control strategies such as optimum static pressure reset and temperature set-up/set-back.
6. Sampling: multiple identical pieces of non-life-safety or otherwise non-critical equipment may be functionally tested using sampling strategy, as defined in functional test procedures.
    a. Significant application differences and significant sequence of operation differences in otherwise identical equipment invalidates their common identity.
    b. Small size or capacity difference, alone, does not constitute difference.
    c. The following equipment may be sample tested: reheat coils, terminal boxes, occupancy sensors, and lighting controls.
7. If 10% or 3 or more identical pieces of equipment (size alone does not constitute a difference) fail to perform to requirements of project documents (mechanically or substantively) due to manufacturing defects or application error not allowing it to meet performance specifications, identical units may be considered unacceptable by Commissioning Provider. In such case, GC/CM shall provide Commissioning Provider with the following:
    a. Within 1 week of notification from Commissioning Provider, GC/CM or manufacturer's representative shall examine other identical units making record of findings. Findings shall be provided to Commissioning Provider within 2 weeks of original notice.
    b. Within 2 weeks of original notification, GC/CM shall provide signed and dated, written explanation of problem, cause of failures, and proposed solution, including full equipment submittals for corrective or replacement equipment, if appropriate. Proposed solutions shall meet requirements of original installation.
    c. Commissioning Provider shall evaluate proposed solution and submit recommendation of approval or disapproval to Owner and Engineer.
    d. When approved, 2 examples of proposed solution shall be installed by GC/CM and Commissioning Provider shall schedule and conduct functional testing of proposed solution. Upon completion of functional testing of proposed solution, Commissioning Provider shall recommend acceptance or disapproval of proposed solution to Owner.
    e. Upon acceptance of proposed solution by Owner, GC/CM shall replace or repair identical items and extend warranty accordingly, if original equipment warranty had begun. Replacement/repair work shall proceed with reasonable speed beginning within 2 weeks of approval of proposed solution.

8. Ensure that each Functional Performance Test is performed under conditions that simulate actual operating conditions as closely as is practically possible.
9. Simulation of operating conditions (not by overwritten value) may be allowed, at Commissioning Provider's discretion. Simulation of conditions shall be accomplished by subjecting the equipment to actual operating conditions by artificial means whenever possible.
10. Where actually achieving simulated operating condition is impractical, as determined by Commissioning Provider or as identified in Functional Performance Test procedure, use of signal generators to create simulated signal may be used to test and calibrate transducers and DDC constants instead of using sensor to act as signal generator via simulated conditions or overwritten values. Signal generators or simulators shall be provided by GC/CM.
11. Overwriting sensor values to simulate conditions, such as overwriting outside air temperature reading in control system to be different than it really is, may be allowed if approved by Commissioning Provider. Simulation of operating conditions is preferable.
12. Altering setpoints: rather than overwriting sensor values, and when simulating conditions is difficult, altering setpoints shall be used to test sequences.
13. Indirect indicators: relying on indirect indicators for responses or performance may be allowed only after the Commissioning Provider has visually and directly verified that indirect readings represent actual conditions and responses over range of test parameters.

3.5 RETESTING OF EQUIPMENT AND/OR SYSTEMS:

A. Prior to retesting of functional performance tests found to be deficient, submit data indicating that deficient items have been completed and corrected to Commissioning Provider.

B. After review of submitted data, if corrective measures are acceptable, Commissioning Provider shall schedule and conduct recheck.

C. If during retesting it becomes apparent that deficient items have not been completed and corrected as indicated in data provided by GC/CM, retesting shall be stopped. Costs for commissioning team to further supervise retesting of Functional Performance Test shall be the responsibility of GC/CM.

3.6 DOCUMENTATION, NONCONFORMANCE, AND APPROVAL OF TESTS:

A. Documentation: Witness and document results of functional tests using specific procedural forms developed for that purpose. Deficiencies or nonconformance issues shall be noted and reported with test results. Include completed test forms in final commissioning report.

B. As Functional Performance Testing progresses and deficiencies are identified, discuss issues and attempt to resolve discrepancies with GC/CM.

C. Approval: Note each satisfactorily demonstrated function on functional test form. Formal approval of functional tests shall be made after review of test reports by Commissioning Provider and Owner. Recommend acceptance of each test to the Owner using standard form. Owner shall give final approval on each test using same form, providing signed copy to Commissioning Provider and GC/CM.

3.7 DEFERRED TESTING:

A. Deferred testing: if required pre-functional or functional test cannot be completed as scheduled, execution of checklists and functional testing may be delayed upon approval of Commissioning Provider and Owner. Deferred tests shall be conducted in same manner as seasonal tests as soon as possible.

B. Schedule and coordinate any required seasonal testing, tests delayed until weather or other conditions are suitable for demonstration of equipment or system's performance. Seasonal testing shall be executed, documented, and deficiencies corrected as specified herein for functional testing. Adjustments or corrections to operations and maintenance manuals and record documents due to test results of shall be made before seasonal testing process is considered complete. Schedule deferred testing with GC/CM and Owner.

3.8 OPERATION AND MAINTENANCE MANUALS:

A. Prior to beginning specified training programs, review draft operations and maintenance manuals, equipment documentation, and as-installed drawings for systems that were commissioned and verify compliance with documents. Communicate deficiencies in documents to Owner and Contractor. When identified deficiencies have been corrected, recommend approval and acceptance of operations and maintenance manuals to Owner. Review equipment warranties and verify that requirements needed to keep warranty valid are clearly identified.

B. Ensure that Owner's Project Requirements, basis of design, are included in the first section of operations and maintenance manuals. Narrative sections shall be updated by responsible parties to record status.

END OF SECTION 23 08 00

SECTION 02 41 13
SELECTIVE DEMOLITION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. The provisions of the General Conditions, Supplementary Conditions, Drawings, Specifications and the Sections included under Division 1, General Requirements and References are included as a part of this Section as though bound herein.

1.2 SECTION INCLUDES

A. Provide labor, materials, services, and equipment necessary to furnish and install work as indicated and as specified herein, which includes, but is not limited to:
   1. Required demolition of designated existing elements
   2. Salvage of designated items

1.3 REFERENCES

A. Comply with NFPA 1 – Chapter 29 and NFPA 241 Standard for Safeguarding Construction Alteration and Demolition Operation 2000 Edition
B. Florida Building Code - FBC

1.4 NOTIFICATION OF OWNERS OF UTILITY LINES AND EQUIPMENT

A. Notify the Owner or local authority owning any conduits, wires, pipes, or equipment affected by demolition work.
B. Arrange for removal or relocation of affected items and pay fees or costs in conjunction with removal or relocation, except as otherwise noted.

1.5 PROTECTION

A. Prior to starting any work on site, provide a safety plan as outlined in Section 423 FBC to the Building Department for approval.
B. Coordinate the implementation of the safety plan with the Building Department, Campus Police, School Representative, and Program Management.
C. Prior to starting demolition operations, provide necessary protection of existing spaces and items to remain.
D. Owner may be continuously occupying areas of the building immediately adjacent to areas of selective demolition. If Owner continues to occupy the facility comply with the following:
   1. Conduct demolition work in a manner that will minimize need for disruption of the Owners normal operations.
   2. Provide protective measures as required to provide free and safe passage of Owner's personnel and public to and from occupied portions of the facilities.
   3. Provide minimum of 72 hours advance notice to Owner of demolition activities that will impact Owners normal operations.
      a. Obtain specific approval from Owner for impact.
E. Owner assumes no responsibility for actual condition of items to be demolished.
   1. Owner will maintain conditions at time of commencement of contract insofar as practical.
F. Protect any exposed existing finish work that is to remain during demolition operations.

G. Erect and maintain dust proof partitions, closures, and ventilator system as required preventing the spread of dust or fumes to occupied portions of the building.
    1. Take whatever precautions necessary to minimize impact on occupied areas.

1.6 REGULATORY REQUIREMENTS

A. Conform to applicable codes for demolition of structures, safety of adjacent structures, dust control, runoff, and erosion control, and disposal of demolished materials.
B. Obtain required permits from authorities having jurisdiction.
C. Notify affected utility companies before starting work and comply with their requirements.
D. Do not close or obstruct roadways, sidewalks, and hydrants, without permits.
E. Conform to applicable regulatory procedures when discovering hazardous or contaminated materials.
    1. Contact the Architect and Owner immediately.
F. Test soils around buried tanks for contamination.
G. No demolition will occur during school hours without the written permission of the Owner.

1.7 EXPLOSIVES

A. The use of explosives is strictly prohibited.

PART 2 PRODUCTS - (Not applicable)

PART 3 EXECUTION

3.1 PREPARATION

A. Verify the proper disconnection and capping of all abandoned utilities.
B. Verify that required barricades and other protective measures are in place.
C. Provide necessary shoring, bracing, and other precautions required for proper support of existing structure during cutting and demolition operations.
D. Photograph existing conditions of structure, surfaces, equipment and surrounding spaces that could be misconstrued as damage resulting from selective demolition work; submit photographs and written report of existing damage to Architect prior to starting work.
    1. Contractor shall repair damage caused to existing facilities at no cost to Owner unless they can provide documentation is indicating pre-existing damage.

3.2 DEMOLITION OPERATIONS

A. Cut and remove elements and equipment as designated on Drawings.
    1. Remove elements in their entirety unless otherwise indicated.
B. Execute demolition in a careful and orderly manner with least possible disturbance or damage to adjoining surfaces and structure.
C. Exercise extreme caution in cutting and demolition of portions of existing structure.
    1. Obtain approval of Architect prior to cutting or removing structural members for any reason.
D. Avoid excessive vibrations in demolition procedures that may transmit through existing structure and finish materials.
E. If hazardous materials are encountered during demolition operations, comply with applicable regulations, laws, and ordinances concerning assessment, removal, handling, and protection against exposure or environmental pollution and immediately contact the District’s ECO.

3.3 DISPOSAL

A. Materials, equipment, and debris resulting from demolition operations shall become property of Contractor.
   1. Remove demolition debris at least once each day in accordance with applicable City, State, and Federal Laws.
B. Cover debris in trucks with approved netting to prevent spillage during transportation.
C. Do not store except in approved containers or burn materials on site.
   1. Remove combustible waste materials in a manner approved by local Fire Department.
   2. Remove, handle, and dispose of any hazardous waste and debris in accordance with applicable City, State, and Federal Laws.
D. Transport demolition debris to off-site disposal area and legally dispose of debris.
E. Use street routes specifically designated by City for hauling debris.
F. When possible dispose of material to recycling centers.

3.4 CLEANING AND REPAIR

A. Leave building broom clean and free of debris, ready to receive new work.
B. Repair demolition performed in excess of that required.
   1. Return structures and surfaces to remain to condition existing prior to commencement of selective demolition.

END OF SECTION

SECTION 02 41 16
BUILDING DEMOLITION

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. The provisions of the General Conditions, Supplementary Conditions, Drawings, Specifications and the Sections included under Division 1, General Requirements and References are included as a part of this Section as though bound herein.

1.2 SECTION INCLUDES

A. Provide labor, materials, services, and equipment necessary to furnish and install work as indicated and as specified herein, which includes, but is not limited to:
   1. Demolition of designated structures or portions thereof and removal of materials from site
   2. Demolition and removal of foundations and slabs-on-grade
   3. Disconnecting and removal of identified utilities
   4. Removal of underground tanks and piping
   5. Salvage of designated items.

1.3 SUBMITTALS

A. Shop Drawings: Indicate demolition and removal sequence and storage location for salvageable items; location and construction of barricades, fences, and temporary work.

1.4 PROJECT RECORD DOCUMENTS

A. Accurately record actual locations of capped utilities, subsurface obstructions, and structures

1.5 QUALIFICATIONS

A. Demolition Firm: Company specializing in performing the Work of this Section with minimum five years documented experience.

1.6 REGULATORY REQUIREMENTS

A. Conform to applicable codes for demolition of structures, safety of adjacent structures, dust control, runoff, and erosion control, and disposal of demolished materials.
B. Obtain required permits from authorities having jurisdiction.
C. Notify affected utility companies before starting work and comply with their requirements.
D. Do not close or obstruct roadways, sidewalks, and hydrants, without permits.
E. Conform to applicable regulatory procedures when discovering hazardous or contaminated materials.
   1. Contact the Architect and Owner immediately.
F. Test soils around buried tanks for contamination.
G. No demolition will occur during school hours without the written permission of the Owner.

1.7 ABATEMENT

A. The Owner will provide an abatement survey.
B. The Owner or his contractor will remove ACM friable or potentially ACM friable hazardous

material.
1. The Owner's contractor will also remove other hazardous material.

C. The Owner will pay all costs of abatement, and for the cost of disposal of fluorescent tubes and ballasts.

1.8 SALVAGE

A. The owner has the first right to salvage reusable equipment.

1.9 DEMOLITION

A. Demolition is by the Owner or under the general construction contract, as indicated on the drawings.
B. DO NOT use Explosives during demolition or construction.

1.10 LEED COMPLIANCE

A. The District has determined that projects shall be constructed to comply with Leadership in Energy and Environmental Design (LEED) requirements as promulgated in the document titled: LEED Reference Guide for Green Building Design and Construction, For the Design, Construction and Major Renovations of Commercial and Institutional Buildings, Including Core & Shell and K-12 School Projects, 2009 Edition.
B. The District goal is LEED Silver Certification for all major projects. Certification is not required for small projects consisting only of minor demolition for limited scope classroom modifications.
C. At the minimum, investigate the following potential LEED compliance areas listed below for construction in accordance with this specification.
   1. SS Prerequisite 1 – Construction Activity Pollution Prevention
   2. MR Credit 2 – Construction Waste Management
   3. MR Credit 3 – Materials Reuse

PART 2 PRODUCTS

2.1 FILL MATERIALS

A. Fill Material: Type fill as specified in Division 31.

PART 3 EXECUTION

3.1 PREPARATION

A. Provide, erect, and maintain temporary barriers and security devices.
B. Protect existing landscaping materials, appurtenances, structures that are not to be demolished.
C. Prevent movement or settlement of adjacent structures.
   1. Provide bracing and shoring.
D. Mark location of utilities.

3.2 DEMOLITION REQUIREMENTS

A. Conduct demolition to minimize interference with adjacent structures.
B. Cease operations immediately if adjacent structures appear to be in danger.
   1. Notify Architect and Owner.
   2. Do not resume operations until directed.
C. Conduct operations with minimum interference to public or private accesses.
   1. Maintain egress and access at all times.
D. Obtain written permission from adjacent property owners when demolition equipment will traverse, infringe upon or limit access to their property.
E. Sprinkle work with water to minimize dust.
   1. Provide hoses and water connections for this purpose.

3.3 DEMOLITION

A. Disconnect, remove, cap, and identify all utilities within demolition areas.
   1. Properly disconnect and terminate all water, sewer, storm, gas, and electrical lines leading to the demolition area as required by code or local utility company.
B. Remove foundation walls and footings to a minimum of two feet below finished grade beyond area of new construction.
C. Remove concrete slabs on grade.
D. Empty buried tanks located within demolition area, remove tanks, components, and piping from site. Dispose of materials removed from tanks per applicable codes and regulations
E. Remove materials being re-installed or retained in manner to prevent damage. Store and protect in accordance with requirements of specifications.
F. Backfill areas excavated because of the demolition, in accordance with Division 31.
G. Rough grade and compact areas affected by demolition to maintain site grades and contours.
H. Remove demolished materials from site, and dispose of materials per applicable codes and regulations.
I. Do not burn or bury materials on site, leave site in clean condition.
J. Remove temporary work.
K. When possible dispose of material to recycling centers.

END OF SECTION

SECTION 07 62 00
FLASHING AND SHEET METAL

PART 1 GENERAL

1.1 SCOPE OF WORK

A. Flashing, counter-flashing, roofing grounds and nailers, and fabricated sheet metal items for roofing intersections with vertical surfaces, copings, curbs, gutters, eaves, roof drains, scuppers, vents and other roof penetrations.

1.2 RELATED SECTIONS

A. Section 01 25 13 – Product Substitution Procedures.
B. Section 01 31 00 – Project Coordination.
C. Section 01 33 00 – Submittal Procedures.
D. Section 01 42 00 – References.
E. Section 01 45 00 – Quality Control.
F. Section 01 66 00 – Product Storage and Handling.
G. Section 01 78 00 – Closeout Submittals.
H. Section 03 52 16 – Lightweight Insulating Concrete.
I. Section 06 10 00 – Rough Carpentry.
J. Section 05 31 23 – Steel Roof Decking.
K. Section 07 11 13 – Bituminous Dampproofing.
L. Section 07 52 00 – Modified Bituminous Membrane Roofing
M. Section 07 61 13 – Standing Seam Metal Roofing.
N. Section 07 72 00 – Roof Accessories.
O. Section 07 92 13 – Elastomeric Joint Sealants.

1.3 REFERENCES

A. See Section 01 42 00 – References for additional reference standards, abbreviations, definitions, and acronyms.
B. ANSI-SPRI/ES-1.
C. American Society for Testing and Materials (ASTM):
   1. ASTM A240/A240M-15a: Standard Specification for Heat-resisting Chromium and Chromium-nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels
   2. ASTM A653/A653M-13: Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot Dip Process
   3. ASTM A755/A755M-15: Standard Specification for Steel Sheet, Metallic-Coated by the Hot Dipped Process (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot Dip Process.
   4. ASTM D4586/D4586M-07(2012)e1: Standard Specification for Asphalt Roof Cement, Asbestos Free.
   5. ASTM B32-08(2014): Standard Specification for Solder Metal (Lead Free).
D. Florida Building Code (FBC), 5th Edition.
E. National Roofing Contractors Association (NRCA) “Roofing and Waterproofing Manual” Detail for installation of units.
F. Sheet Metal and Air-Conditioning Contractor’s National Association, Inc. (SMACNA): Architectural Sheet Metal Manual”, latest Edition. Details for fabrication of units, including flanges and installation to coordinate with type of roofing indicated.

1.4 SUBMITTALS

A. Comply with Section 01 33 00 – Submittal Procedures.
B. Submit Shop Drawings on flashing and sheet metal work.
C. Samples:
   1. Submit 8” (203 mm) x 8” (203 mm) square samples of each specified sheet materials to be exposed as finished surfaces.
   2. Submit each samples of factory fabricated products exposed as finished work, complete with specified factory finish.

1.5 QUALITY ASSURANCE

A. Comply with Section 01 45 00 – Quality Control.
B. Regulatory Requirements: Ensure flashing and sheet metal complies with requirements of Florida Building Code, NRCA, SMACNA, and ANSI-SPRI/ES-1.
C. Coordinate application of flashings with application of roofing, protruding material, and roof accessories to provide a complete weather tight installation under provisions of the specified warranty requirements.
D. Perform work in accord with referenced standards and manufacturer’s printed installation instructions.

1.6 PRE-INSTALLATION MEETING

A. Comply with Section 01 31 00 – Project Coordination.
B. Meeting Format:
   1. Pre-installation meeting shall occur after approval of Shop Drawings by Contractor/CM and accepted by AE.
   2. Meeting shall convene minimum of one week before starting work.
   3. Required Attendees:
      a. Contractor/CM.
      b. Roof flashings installer.
      c. Roofing and roofing equipment manufacturers.
      d. Installers of deck or substrate construction to receive roofing work.
      e. Installers of roof-top mechanical, plumbing or electrical items or other work in and around roofing that must precede or follow roofing work
      f. Other subcontractors associated with work.
      g. Architect.
      h. Owner’s Project Manager.
   4. Contractor/CM shall make arrangements for meeting and notify parties required to attend.
   5. Agenda shall include:
      a. Review preparation and installation procedures and coordinating and scheduling required with related work.
      b. Review roof, roof equipment, doors, and window system requirements (drawings, specifications, and other contract documents).
      c. Review Shop Drawings and associated submittals.
      d. Review manufacturer's technical materials.
      e. Review and finalize construction schedule related to work and verify availability of materials, personnel, equipment and facilities needed to make progress and avoid delays

f. Review required inspection, testing, certifying and material usage accounting procedures.
g. Review weather and forecasted weather conditions, and procedures for coping with unfavorable conditions, including temporary roofing.
h. Meeting may be combined with roofing pre-installation meeting.

1.7 WARRANTIES

A. Comply with Section 01 78 00 – Closeout Submittals.
B. Provide installer's five (5) year written warranty for flashings indicated.
   1. Flashings shall resist design wind speeds required by Florida Building Code, Chapter 16, in which installer agrees to repair or replace flashing components of roofing system that fail in materials or workmanship within specified warranty period.
   2. Flashing failures shall include water leaks, fasteners, accessories, flashing and sheet metal, grounds/nailers, gutters and downspouts, scuttles and vents, curbs, and other flashing components of roofing system.
C. See Roofing Specifications for additional warranties that shall also apply.
D. Warranty shall be a term type, with no conditions, exclusions, including exclusions of remedies by Owner, deductibles or limitations on coverage amount. Conditions, exclusions, or dollar limits.

PART 2 PRODUCTS

2.1 MATERIALS

A. Manufactured flashing and sheet metal products are to contain recycled content.
B. Sheet Material:
   1. Type 302 or 304 stainless steel, 22 gage, complying with ASTM A167.
   2. Flashing for Pipes, Conduits, and Round Equipment Supports: Type 304 stainless steel, 26 gage, 2B, complying with ASTM A240.
   3. Solder: Per ASTM B32.
C. Fastening Devices:
   1. Stainless steel fasteners compatible with metal and roofing system. Use of powder-activated fasteners is prohibited.
   2. Attach sheet metal to wood with exposed fastenings: No. 10 x 1-1/4" (31.8mm) pan head stainless steel sheet metal screws. Provide neoprene sealant washers and stainless steel washers under screw heads.
   3. Attachment of sheet metal to masonry or concrete: No. 10 x 1-1/4" (31.8mm) pan head stainless steel masonry screws. Provide neoprene sealant washers and stainless steel washers under screw heads.
   4. Roofing Cement: Plastic roofing cement complying with requirements of ASTM D2822 or as appropriate and as recommended by roofing manufacturer.

2.2 ACCESSORIES

A. Roof Drain Flashing: Minimum 4 lb (1.82 Kg) per ft² lead sheet flashing, 36” (91.44 cm) x 36” (91.44 cm) installed in accord with NRCA specifications.
B. Cants:
   1. Pre-fabricated 16-gage, galvanized, minimum 4” (101 mm) vertical height, formed at 45° angle to walls and parapets.
   2. Manufacturer: Concrecel USA; Product: ARBS (Alternative Roof Blocking System).
   3. Substitutions: Comply with Section 01 25 13 - Product Substitution Procedures.
C. Copings:
   1. Fabricate in approximately 10’ (3 m) sections using sheet 22-gage stainless steel to detail as indicated.
   2. Provide continuous 16-gage stainless steel outer hold-down cleat with punched holes at 6” (152 mm) on center and face fasten at inward facing parapet components with removable fasteners as required for sheet metal.
   3. Provide 8” (203 mm) wide joint covers.
   4. Manufacturer: SBC Industries, North Miami, Florida.
   5. Substitutions: Comply with Section 01 25 13 - Product Substitution Procedures.
D. Curb to Duct Flashing and Counter Flashing:
   1. Fabricate from stainless steel to fit duct curbs and ducts projecting from curbs.
   2. Provide 4” (101 mm) vertical flange to cover top edge of bituminous base flashings. Form flange bottom towards curb, with ¼” (6.3 mm) bottom edge bent ¼” (6.3 mm) out and hemmed.
   3. At top of curbs bend metal 90° and extend horizontally over to duct, then bend upward and extend vertically not less than 3” (71.2 mm) from top edge of flashing out 3/8” (9.5 mm) to receive sealant.
   4. Provide for field soldered lap joints at corners and 1” (25.4 mm) lap joints at horizontal miter splices.
E. Edge Drips:
   1. Fabricate using sheet 22-gage stainless steel drip edge to detail indicated, in not over 10’ (3 m) sections.
   2. Provide continuous 16-gage stainless steel continuous cleat with punched holes spaced as necessary. If cleat extends 6” (152 mm) or more below top fastener, provide second row of punched holes spaced as necessary.
   3. Provide 4” (101 mm) roof flange, and extend bottom drip not less than 1” (25.4 mm) below bottom of roof sheathing, with bottom ¾” (19 mm) kick-out to drip water away from finish wall.
   4. Manufacturer: Concrecel USA; Product: ARBS (Alternative Roof Blocking System).
   5. Substitutions: Request for substitutions shall be in accord with Section 01 25 13 - Product Substitution Procedures.
F. Pipes, Conduits, Wires, and Round Equipment Supports Penetrating Roofing or Resting on Roofing:
   1. Type 304 stainless steel, 26-gage, complying with ASTM A240.
   2. Form tubular stainless steel sleeves sized to shape of penetration, not less than 8” (202 mm) above finished roofing with 4” (101 mm) wide base flange welded to water-tight to sleeve.
   3. Shop punch flanges.
   4. Seal flashing and cover with protective umbrella.
   5. Pre-manufactured roof penetration seals.

a. Manufacturer: SBC Industries, North Miami, Florida.

6. Substitutions: Request for substitutions shall be in accord with Section 01 25 13 - Product Substitution Procedures.

G. Sanitary Vent Stack Flashings:
1. 4 lb (1.82 Kg) per ft² lead flashing.
2. Form tubular lead flashing sleeve not less than 8" (202 mm) high with diameter ½" (12.7mm) larger than vent stack.
3. Provide 4" (101 mm) wide flange soldered water-tight.
4. Provide vandal-proof vent covers.

H. Scuppers:
1. Fabricate using stainless steel to profiles and details shown.
2. Lock seam corners, solder water-tight and hem outer exposed edges.
3. Provide 4" (101 mm) wide minimum flanges formed to fit cants, decks and vertical wall surface.
4. Shop punch flanges for fastenings at 6" (152 mm) on center.

I. Gutters:
1. Gutters shall be minimum 6" (152 mm) wide x 6" (152 mm) deep, 24-gage stainless steel with mill finish.
2. Gutter straps shall be 1" (25.4 mm) wide rolled stainless steel located at 24" o.c. (61 cm) and pop riveted to gutter.
3. Gutter brackets shall be 1.25" wide by 0.125" thick stainless steel with mill finish located at 2'-6" o.c.
4. Gutters shall be in minimum 10'-0" long sections formed to provide flush exterior seams between gutter sections. Joints between gutter sections shall be 1/2" wide with 6" wide cover plates and support brackets to allow for expansion and contraction. Joints shall be fully bedded in sealant on inside joints.

J. Downspouts:
1. Downspouts:
a. Downspouts shall be 5" by 5" square 0.125" thick stainless steel with mill finish fabricated in one continuous piece down to kick-out diverter section at bottom of downspout.
b. Sections shall be welded and ground smooth.
2. Downspout bracket/straps:
a. Straps shall be 1" wide by 0.125" thick located not more than 4'-0" apart with top and bottom brackets located not more than 12" from ends of downspouts.
b. Brackets shall be attached to structure with two .025"diameter Zamac drive pins per bracket.
c. Bracket shall be attached to gutter with two #10 sheet metal screws each side of bracket and calked with sealant.

K. Stucco Stop with Counter-flashing (2-piece):
1. Fabricate in approximately 10 ft sections using sheet stainless steel to details indicated.
2. Provide receiver with 1.5" wall flange, 0.75" sloping stucco stop, and 0.75" flange bend downward with 0.50" hem.
3. Shop punch wall flange for fastening.
4. Provide shop fabricated soldered corner splices extending 4" each way.
5. Provide counterflashing with 1.5" 45° top flange with 0.35" kick back at top and 4" bottom flange formed inward ¾" towards wall with hemmed 0.25" kick at bottom.
6. Provide 1.5" x 4" storm cleats.
7. Manufacturer: Subject to compliance with requirements, provide products by following manufacturer:

a. SBC Industries, North Miami, Florida.

8. Substitutions: Request for substitutions shall be in accord with Section 01 25 13 - Product Substitution Procedures

L. Stucco Top with Counter-flashing (1-piece for re-roofing):
1. Fabricate in approximately 10 ft. sections using sheet stainless steel to details as indicated.
2. Provide counterflashing with 0.50" 45° leg for sealant with 1.5" wall flange with a 4" bottom flange formed inward 0.75" towards wall with hemmed 0.50" kick at bottom.
3. Shop punch wall flange for fastening.
4. Provide shop fabricated soldered corner splices extending 4 inches each way.
5. Manufacturer: Subject to compliance with the specified requirements, provide products by the following manufacturer:
a. SBC Industries, North Miami, Florida.
6. Substitutions: Substitutions: Request for substitutions shall be in accord with Section 01 25 13 - Product Substitution Procedures

M. Surface Mounted Flashing (1-piece):
1. Fabricate in approximately 10 ft. sections using sheet stainless steel to detail as indicated.
2. Provide flashing with 1.50" wall flange with 0.25" kick at top to receive sealant, 0.50" 135° sloping top flange and 4" bottom flange formed inward 0.75" towards wall with hemmed 0.50" kick at bottom.
3. Shop punch wall flange for fastening to meet wind loads per FBC
4. Provide shop fabricated corner splices extending 4".
5. Manufacturer: Subject to compliance with the specified requirements, provide products by following manufacturers:
a. SBC Industries, North Miami, Florida.
6. Substitutions: Request for substitutions shall be in accord with Section 01 25 13 - Product Substitution Procedures

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not proceed with work until conditions detrimental to proper and timely completion of work have been corrected in acceptable manner.

3.2 INSTALLATION

A. Lap, rivet, lock, or seal joints, as field conditions require.
B. Provide necessary reinforcement, miscellaneous fittings, and accessories.
C. Apply flashing and sheet metal work including miscellaneous fittings and accessories to even, smooth, sound, thoroughly clean and dry surfaces that are free from defects that might affect application. Prime metal flanges that receive bitumen under provisions of FBC and manufacturer's requirements.
D. Perform soldering work slowly, with properly heated coppers to thoroughly heat seam material and sweat solder through full width of seam that shows no less than 1" of evenly flowed solder. Solder under provisions of ASTM B 32.
1. Start soldering immediately after application of flux.
2. Solder flat locked seam.
E. Isolate dissimilar metals with accepted isolation paint or other accepted materials.

F. Make flashing and sheet metal work water and weather tight, with lines, arises and angles sharp and true and plane surfaces free from waves and buckles.
G. Provide sufficient fasteners and related hardware to ensure a complete and weather tight system.
H. Base Flashings at Aluminum Walkway Covers Abutting Concrete and Masonry:
    1. Set flashing tight against wall and with roof flange set on aluminum deck in bed of sealant.
    2. Secure roof flanges to metal deck with No. 10 x 0.50" stainless steel sheet metal screws at 6" on center maximum. Provide sealant washers and stainless steel washers under screw heads.
I. Cants Strips: Install at transitions of roof membrane with flat vertical surfaces.
J. Copings:
    1. Secure outer hold-down cleat to woodblock at 6 inches on center with ring shank roofing nails.
    2. Install coping over cleat. Allow 0.125" space between each coping section.
    3. Secure inside face of coping with removable grommet type fasteners.
    4. Provide 1" to 12" slope at coping to inner parapet wall.
    5. Install joint covers in full bed of sealant.
K. Curb to Duct Flashing and Counterflashing:
    1. Install flashings after ducts through curbs are in place and after bituminous base flashings are completed.
    2. Place flashings in place on curbs and solder corners and corner miter laps water-tight.
    3. Secure counterflashings to vertical edge of curb nailers with No. 10 stainless steel sheet metal screws through sealant washers at not over 12" on center.
    4. Secure vertical upturned duct flashing to duct with No. 10 stainless steel sheet metal screws through sealants washers at not over 6" on center.
    5. Seal joint between flashings and ducts with sealant per Section 07 92 13 – Elastomeric Joint Sealants.
L. Edge Drips:
    1. Install continuous 20 gage stainless steel cleat.
    2. Set 22 gage stainless steel edge drip roof flanges in full bed of roofing cement over completed roofing.
    3. Lap splices 4" minimum and seal top horizontal surface laps with cold bitumen.
    4. Stagger nails at flange to roof deck at 4" on center.
    5. Cover roof flanges with 2-ply felt stripping set in full bed of roofing cement.
    6. Locate drip bottom not less than 0.75" away from finished vertical surfaces.
M. Roof Drains:
    1. Prime roof drain flanges before applying roof felts.
    2. Set lead in full bed of cold bitumen over intermediate plies or cap sheet.
    3. Strip lead cover with 2 layers of roofing felts in solid coats of hot bitumen.
N. Roof penetration materials at pipes, conduits and round equipment supports.
    1. After preliminary examination install conical sealant cover with sealant.
O. Sanitary Vent Stack Flashings:
    1. Install in accord with NRCA specifications.
P. Scuppers:
    1. Set scuppers in full bed of roofing cement over completed base flashing and roof membrane.
    2. Secure to masonry walls and concrete decks with stainless sheet metal screws in lead shields at 6" on center.
    3. Secure to wood nailers with stainless steel sheet metal screws at 6" on center.
Q. Stucco Stop with Counterflashing (2-piece):

1. Set receiver on masonry and concrete walls where indicated.
2. Lap spices 4 inches minimum and seal laps with sealant.
3. Secure to wall with No. 10 x 1.25” minimum Tap-Con screws 12” on center maximum.
4. Check for membrane/bitumen seal on top of felt flashing before counterflashing installation.
5. Attach storm cleats at 30” on center and with 1 cleat at each joint.
6. Insert counterflashing into receiver, and secure tightly with storm cleats.

R. Surface Mounted Flashing (1-piece):
1. Set on masonry and concrete walls over base flashing where indicated.
2. Lap splices 4” minimum and seal laps with sealant.
3. Secure to wall with No. 10 x 1-1/4 inch Tap-Con pan head screws at 12 inches on center maximum. Provide neoprene sealant washers and stainless steel washers.
4. Where corrugated metal wall occurs, place premolded neoprene filler strip on wall immediately above top of metal base flashing.
   a. Set filler strip in sealant and seal abutting edges of filler strip with sealant.
   b. Place counterflashing over filler strip set in sealant and secure flashing to metal wall through filler strip with No. 10 x appropriate length stainless steel sheet metal screws at 6 inches on center maximum and centered on wall flutes.
   c. Provide sealant washers and stainless steel washers under screw heads.
5. Check for membrane/bitumen seal on top of felt flashing before flashing installation.

END OF SECTION

SECTION 32 31 13
CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 DEFINITION

A. A fence is defined as a physical or visual barrier between areas. It can be constructed of various materials to perform the function it is designed to do. A physical and visual fence is described in this standard in fences A thru H and can be regimental or architectural. This type of fencing is used to separate areas that have different functions and for security.

B. A fence or barrier can be made with landscape materials such as ground cover, bushes, trees and earthen berms. Refer to DGM Standard 02930, Exterior Plants, for materials. This type of fencing will be used in low security areas and for an aesthetic accent to the facility.

C. It is the intent of Martin County School District to have an “open street” concept at each campus. We also realize that some situations may call for additional security in the form of fencing.

1.2 APPLICATION

A. This Standard designates the areas that receive fencing, gates and accessories; the heights of the fencing and the materials used at each location.

B. Fencing and Site requirements for fencing shall comply with Florida Building Code, current edition with supplements.

1.3 FENCE TYPE: A through H

A. Chain-Link Fabric: Black PVC coated, steel, ASTM F 668

B. Framework: Black Polymer coated steel
   1. Gates: ASTM F 900-05
   2. Posts and Rail: ASTM F 1043-06 Material Group 1A and 1C
   3. Fence Fittings: ASTM 626-96a
   4. Padlocks: Provide as specified in DC 08 71 00 – Door Hardware.

C. Installation: ASTM F 567-00, Installation of Chain-Link Fences

1.4 SUBMITTALS, GENERAL INSTRUCTIONS, PRODUCT DATA, SHOP DRAWINGS, SAMPLES, CERTIFICATES

A. Supply product data, details, dimensions and finishes for the following:
   1. Fence and gateposts, rails and fittings
   2. Chain-link fabric, reinforcement and attachments
   3. Gates and hardware
   4. Privacy slats (where shown on drawings) (possible at dumpsters)
   5. Tension wire
   6. Concrete footings

B. Shop Drawings: Show locations of fence, gates, posts, rails, tension wires, attachments, heights and finish.

C. Warranty Requirements: One (1) year from date of Substantial Completion.

1.5 QUALITY ASSURANCE

A. Installer Qualifications
   1. An experienced installer who has successfully completed chain-link fences and gate projects.
B. Contractor Qualifications
   1. The Contractor shall be licensed in Martin County, Florida to install the work described in this section.
C. Pre-Construction Surveys/Conferences
   1. Contractor shall verify information for chain-link fences and gates shown on Drawings in relation to property survey and existing structures and verify field dimensions before work begins.
D. Preparation/Field Verification
   1. Contractor shall secure information on locations of underground conduits and utility locations before work begins.
   2. Do not interrupt utilities serving facilities occupied by the Owner. Repair of interrupted underground conduits and utilities shall be the responsibility of the Contractor.
E. Samples
   1. Supply samples for approval for each item listed in paragraph 1.4 Submittals.

1.6 SAFETY PROCEEDURES

A. Construction, dealing with School Safety, of fencing shall be done as follows:
   1. During hours when school is not occupied by students or in areas that are marked and barricaded as construction areas.
   2. Do not interrupt campus operation with fence construction.
B. Construction shall comply with OSHA Standards on safety during construction.

1.7 FENCING PERMIT

A. A permit for the installation of the fence is necessary and the responsibility of the fencing contractor.

PART 2 - PRODUCT/ SYSTEM

2.1 COMPONENTS: MATERIALS, SIZES, FINISHES

A. Fabric, posts, gates & accessories.

2.2 MANUFACTURERS: Chain Link Types A-H

A. Ameristar
B. Master – Halco
C. Stephens Pipe & Steel
D. Merchant Metals

2.3 MANUFACTURER: Architectural Fence (Type I)

A. Omega II Fence System

2.4 TYPE A Chain-Link Fence

A. The location of this fence is around the perimeter of a school facility, to be located within 1 foot of the property line. Also, for water retention areas, drainage ditches and canals (in which case a 20'-0" maintenance swath shall be provided between the fence and thewater line).
   1. Fence height: 6'-0" above grade.
   2. Mesh and wire size: 2-inch mesh, .148-inch diameter, steel core, vinyl coated with the top and bottom selvage knuckled. Provide mesh fabricated in one piece width (height).
   3. Top and bottom tension wire No. 6 gauge, spring coil vinyl coated.
   4. Brace rail: Round, 1-5/8" OD. With 3/8" truss rod.
   5. Stretcher bars: 3/16" x ¾" hot dipped galvanized steel, vinyl coated. One stretcher bar for each gate and end post & two bars for each corner and pull post.
   6. Tie Wire: No. 9 gauge vinyl coated steel tie wire.
   7. Posts: (Maximum 10'-0" o.c.)
      a) Terminal; 3" OD, pull post @ 350' max.
      b) Line; 2 ½" OD, 10' maximum spacing.
   8. Gate or gates: Site specific.
   9. Post for swing gates, leafs up to and including 6' wide = 3" OD.
      a) Over 6' to 12' wide = 4" OD.
      b) Over 12' to 18' wide = 6 5/8" OD.
      c) Over 18' = 8 5/8" OD.
   10. Hardware
      a) Hinges: Per ASTM F900-05.
      b) Latches: Lockable with padlock. Per ASTM F900-05
   11. Footing: Concrete 2500 psi, Per ASTM F567

B. Non-Climb Mini mesh.
   1. Fence height: 8'-0" above grade.
   2. Mesh and wire size: 1-inch mini mesh/non-climb, .148-inch diameter, steel core, vinyl coated with top and bottom selvage knuckled. Provided mesh fabricated in one piece widths (height).
   3. Bottom & Middle tension wire: No. 6 gauge spring coil vinyl coated.
   4. Top rail: Round, 1-5/8" OD, located 6" below top of knuckled mesh.
   5. Brace rail: Not applicable, n/a.
   6. Stretcher/tension bars: 3/16" x 3/4" hot dipped galvanized steel, vinyl coated. Two stretcher bars for each gate, one stretcher bar each end post, and two stretcher bars for each corner and pull post.
   7. Tie wire: No. 9 gauge vinyl coated steel core tie wire.
   8. Posts: (Maximum 10'-0" OC)
      a) Terminal post and End post. Pull post @ 350'LF max.
      b) Line: 2-1/2" OD sch. 40, 11'-6" length with 10' maximum spacing.
   9. Gate or Gates: Not applicable, n/a.
   10. Post for swing gates, leaf's up to and including 6' wide – 3" OD.
      a) Over 6' – 12' wide – 4" OD
      b) Over 12' – 18' wide – 6-5/8" OD

c) Over 18” – 8-5/8” OD.

11. Hardware:
    a) Hinges: Per ASTM F900-05.
    b) Latches: Lockable with padlock, Per ASTM F900-05.
    c) Tamper proof anchors: when required to anchor mini mesh to concrete in a secure manner the use of zinc plated steel or stainless-steel anchors are required. A style similar to Torx-Pin. The use of large diameter washer is also required.
    d) Tension wire anchors: Earth anchors 15” length min – 3” OD min steel anchor with a min of one flight will be required. Earth anchors will have a closed top for tension wire to be secured. Earth anchors are required between each line post that has a 6’-0” min span or greater. Earth anchors shall be centrally located when practical. Should soil conditions not allow earth anchors to be twisted/turned into soil, the use of concrete is required. Concrete footing to be twice diameter of the anchor and min 15” depth.
12. Footing: Concrete 2500 psi, Per ASTM F567.

2.5 TYPE B Chain-Link Fence

A. This fence encloses the Kindergarten Tot Lot (Fence is not required at the Youth Lot).
1. Fence height: 4’-0” above grade.
2. Mesh and wire size: 2-inch mesh, .148 diameters, steel core, vinyl coated with the top and bottom selvage knuckled. Provide mesh fabricated in one-piece width (height).
3. Top rail: Round, 1-5/8” OD.
4. Bottom Tension Wire: 6 gauge spring coil vinyl coated.
5. Stretcher Bars: 3/16” x ¾” hot dipped galvanized steel, vinyl coated. One stretcher bar for each gate and end post & two bras for each corner and pull post.
6. Tie wire: No. 9 gauge vinyl coated steel tie wire.
7. Posts: (Maximum 10’-0” o.c.)
    a) Terminal; 3” OD.
    b) Line; 2 ½” OD.
8. Gate: Double 4’-0” wide, double swing. Gate shall swing out.
9. Post for swing gates, leafs up to and including 6’ wide = 3” OD.
10. Hardware:
    a) Hinges: Per ASTM F900-05.
    b) Latches: Lockable with padlock. Per ASTM F900-05.
11. Footing: Concrete 2500 psi, Per ASTM F567

B. Non-Climb Mini mesh.
1. Fence height: 8’-0” above grade.
2. Mesh and wire size: 1-inch mini mesh/non-climb, .148-inch diameter, steel core, vinyl coated with top and bottom selvage knuckled. Provided mesh fabricated in one piece widths (height).
3. Bottom tension wire: No. 6 gauge spring coil vinyl coated.
4. Top rail: Round, 1-5/8” OD, located 6” below top of knuckled mesh.
5. Brace rail: Not applicable, n/a.
6. Stretcher/tension bars: 3/16” x 3/4" hot dipped galvanized steel, vinyl coated. Two stretcher bars for each gate, one stretcher bar each end post, and two

stretcher bars for each corner and pull post.

7. Tie wire: No. 9 gauge vinyl coated steel core tie wire.
8. Posts: (Maximum 10'-0" OC)
   a) Terminal post and End post. Pull post @ 350'LF max.
   b) Line: 2-1/2" OD sch. 40, 11'-6" length with 10' maximum spacing.
9. Gate or Gates: Not applicable, n/a.
10. Post for swing gates, leaf's up to and including 6' wide – 3" OD.
    a) Over 6' – 12' wide – 4" OD
    b) Over 12' – 18' wide – 6-5/8" OD
    c) Over 18" – 8-5/8" OD.
11. Hardware:
    a) Hinges: Per ASTM F900-05.
    b) Latches: Lockable with padlock, Per ASTM F900-05.
    c) Tamper proof anchors: when required to anchor mini mesh to concrete in a secure manner the use of zinc plated steel or stainless-steel anchors are required. A style similar to Torx-Pin. The use of large diameter washer is also required.
    d) Tension wire anchors: Earth anchors 15" length min – 3" OD min steel anchor with a min of one flight will be required. Earth anchors will have a closed top for tension wire to be secured. Earth anchors are required between each line post that has a 6'-0" min span or greater. Earth anchors shall be centrally located when practical. Should soil conditions not allow earth anchors to be twisted/turned into soil, the use of concrete is required. Concrete footing to be twice diameter of the anchor and min 15" depth.
12. Footing: Concrete 2500 psi, Per ASTM F567.

2.6 TYPE C Chain-Link Fence

A. This fence is used to enclose equipment, dumpster and bicycle rack areas.

1. Fence height: 6'-0" above grade.
2. Mesh and wire size: 2-inch mesh, .148 diameter, steel core, vinyl coated with the top and bottom selvage knuckled. Provide mesh fabricated in one-piece width (height).
3. Top rail: Round, 1-5/8" OD.
4. Brace rail: Round, 1-5/8" OD with 3/8" truss rod.
5. Bottom Tension Wire: 6 gauge spring coil vinyl coated.
6. Stretcher bars: 3/16" x ¾" hot dipped galvanized steel, vinyl coated. One stretcher bar for each gate and end post & two bars for each corner and pull post.
7. Tie wire: No. 9 gauge vinyl coated steel tie wire.
8. Posts: (Maximum 10'-0" o.c.)
   a) Terminal; 3" OD.
   b) Line; 2 ½" OD.
9. Gate: Bicycle rack: One gate 8' gate (4'-0" double leaf). All gates shall swing out. Gates shall be at opposite ends of enclosure.
10. Gate: Equipment, Dumpster Enclosure: Gate shall be sized for equipment and dumpster repair and removal. Minimum size 4'-0" single leaf. For gates 5'-0" and larger, use double leaf. All gates shall swing out 180 degrees.
11. Hardware:

a) Hinges: Per ASTM F900-05
b) Latches: Lockable with padlock. Per ASTM F900-05

12. Footing: Concrete 2500 psi, Per ASTM F900-05

B. Non-Climb Mini mesh.
1. Fence height: 8’-0” above grade.
2. Mesh and wire size: 1-inch mini mesh/non-climb, .148-inch diameter, steel core, vinyl coated with top and bottom selvage knuckled. Provided mesh fabricated in one piece widths (height).
3. Bottom tension wire: No. 6 gauge spring coil vinyl coated.
4. Top rail: Round, 1-5/8” OD, located 6” below top of knuckled mesh.
5. Brace rail: Not applicable, n/a.
6. Stretcher/tension bars: 3/16” x 3/4" hot dipped galvanized steel, vinyl coated. Two stretcher bars for each gate, one stretcher bar each end post, and two stretcher bars for each corner and pull post.
7. Tie wire: No. 9 gauge vinyl coated steel core tie wire.
8. Posts: (Maximum 10’-0” OC)
   a) Terminal post and End post. Pull post @ 350’LF max.
   b) Line: 2-1/2” OD sch. 40, 11’-6” length with 10’ maximum spacing.
9. Gate or Gates: Not applicable, n/a.
10. Post for swing gates, leaf’s up to and including 6’ wide – 3” OD.
    a) Over 6’ – 12’ wide – 4” OD
    b) Over 12’ – 18’ wide – 6-5/8” OD
    c) Over 18” – 8-5/8” OD.
11. Hardware:
    a) Hinges: Per ASTM F900-05.
    b) Latches: Lockable with padlock, Per ASTM F900-05.
    c) Tamper proof anchors: when required to anchor mini mesh to concrete in a secure manner the use of zinc plated steel or stainless-steel anchors are required. A style similar to Torx-Pin. The use of large diameter washer is also required.
    d) Tension wire anchors: Earth anchors 15” length min – 3” OD min steel anchor with a min of one flight will be required. Earth anchors will have a closed top for tension wire to be secured. Earth anchors are required between each line post that has a 6’-0” min span or greater. Earth anchors shall be centrally located when practical. Should soil conditions not allow earth anchors to be twisted/turned into soil, the use of concrete is required. Concrete footing to be twice diameter of the anchor and min 15” depth.
12. Footing: Concrete 2500 psi, Per ASTM F567.

2.7 TYPE D Chain-Link Fence

A. The location of this fence is around the perimeter of Middle and High School tennis courts and basketball courts. (Refer to DC 11 16 10 for plan layouts.)
1. Fence height: 10’-0” above court surface.
2. Mesh and wire size: 2-inch mesh, .148 diameters, steel core, vinyl coated with top and bottom selvage knuckled. Provide mesh fabricated in one-piece width (height).
3. Top rail: Round, 1-5/8” OD.
4. Brace rail: Round, 1-5/8” OD with 3/8” truss rod.

5. Bottom Tension Wire: 6 gauge spring coil vinyl coated.
6. Stretcher bars: 3/16" x 3/4" hot dipped galvanized steel, vinyl coated. One stretcher bar for each gate and end post & two bars for each corner and pull post.
7. Tie wire: No. 9 gauge vinyl coated steel tie wire.
8. Posts: (Maximum 10'-0" o.c.)
   a) Terminal; 3" OD.
   b) Line; 3" OD.
9. Gates: Provide two (2) gates at opposite corners of each court. The size of each gate shall be 4"-0" wide x 7'-0" high. Gates shall swing outward 180 degrees.
10. Post for swing gates, leafs up to and including 6'-0" wide = 3" OD.
11. Hardware:
    a) Hinges: Per ASTM F900-05
    b) Latches: Lockable with padlock. Per ASTM F900-05
12. Wind Block: Provide reinforced woven fabric to act as a wind block on all fencing. Wind block shall be 6'-0" and centered in the 10'-0" high fence.
    a) Note: No wind block is required for basketball court.
13. Footing: Concrete 2500 psi, Per ASTM F567

2.8 TYPE E Chain-link Fence

A. The location of this fence is on Elementary School and Middle Schools softball field backstops. (Refer to DC 11 16 10 for plan layout.)
   1. Backstop height: 16' above grade (16' vertical section w/ 4' over-hang).
      a) Note: Additional height and overhang may be necessary for protection of public safety of adjoining sites from foul ball trajectories.
   2. Mesh and wire size: Lower 8'-0" height shall be 2-inch mesh, No. 6 gauge core wire. Top 8'-0" height shall be 2-inch mesh, No. 9 gauge core wire. Both gages shall be vinyl coated with top & bottom selvage knuckled.
   3. Top of overhang, top, bottom and center (four total) rails: Round, 1-5/8" OD.
   4. Posts: Round, 3" OD. (Maximum 10'-0" o.c.)
   5. Overhang 45° Arms: 2" OD, welded to post.
   6. Tie wire: No. 9 gauge vinyl coated steel tie wire.
   7. Footing: Concrete 2500 psi, Per ASTM F567, 16" diameter x 48" deep footings.

2.9 TYPE F Chain-Link Fence

A. The location of this structure (backstop) is on High School softball fields. (Refer to DC 11 16 10 for plan layout.)
   1. Backstop Fence:
      a) Height: 24' above grade.
      b) Mesh and wire size: Lower 12'-0" height shall be 2-inch mesh. No. 6 gauge core wire. Top 12'-0" height shall be 2-inch mesh, No. 9 core wire. Both gauges shall be vinyl coated with the top & bottom selvage knuckled. Provide mesh fabricated in one-piece width (height) for each 12' section.
      c) Top, bottom & intermediate (five total) rails: Round, 1-5/8" OD
      d) Posts: Round, 4" OD (Maximum 10'-0" o.c.)
      e) Tie Wire: No. 9 gauge vinyl coated steel tie wire.

f) Footing: Concrete 2500 psi 18" dia. x 48" deep.

2. Backstop To Dugout Fence:
   a) Height: 18' above grade.
   b) Mesh and wire size: 2-inch mesh, .148 inch diameter, steel core, vinyl coated with the top & bottom selvage knuckled.
   c) Top, bottom & two intermediate (four total) rails: Round, 1-5/8" OD
   d) Posts: Round, 3" OD (Maximum 10'-0" o.c.)
   e) Tie wire: No. 9 gauge vinyl coated steel tie wire.
   f) Footing: Concrete 2500 psi 12" dia. x 36" deep.
3. Outfield Fence from Dugout to Dugout:
   a) Height: 6' above grade.
      1. Note: Additional height and overhang may be necessary for protection of public safety of adjoining sites from foul ball trajectories.
   b) Mesh and wire size: 2-inch mesh, .148 diameter, steel core, vinyl coated with the top and bottom selvage knuckled. Provide mesh fabricated in one- piece width(height).
   c) Top rail: Round, 1-5/8" OD.
   d) Brace rail: Round, 1-5/8" OD. With 3/8" truss rod.
   e) Bottom Tension Wire: 6 gauge spring coil vinyl coated.
   f) Stretcher Bars: 3/16" x ¾" hot dipped galvanized steel, vinyl coated. One stretcher bar for each gate and end post & two bars for each corner and pull post.
   g) Tie wire: No. 9 gauge vinyl coated steel tie wire.
   h) Posts: (Maximum 10'-0" o.c.)
      1. Terminal; 3" OD.
      2. Line; 2 ½" OD.
   i) Footing: Concrete 2500 psi, Per ASTM F567

2.10 TYPE G Chain-Link Fence

A. The location of this fence is on High School baseball fields. (Refer to DC 11 16 10 for plan layouts.)
   1. Backstop Fence:
      a) Height: 28' above grade.
      b) Mesh and wire size: Lower 12'-0" height shall be 2-inch mesh. No. 6 gauge core wire. Top 16'-0" height shall be 2-inch mesh, No. 9 core wire. Both gauges shall be vinyl coated with the top & bottom selvage knuckled. Provide mesh fabricated in one-piece width (height) for each 12' section.
      c) Top, bottom & intermediate (five total) rails: Round, 1-5/8" OD
      d) Posts: Round, 6-5/8" OD (Maximum 10'-0" o.c.)
      e) Tie Wire: No. 9 gauge vinyl coated steel tie wire.
      f) Footing: Concrete 2500 psi 24" dia. x 48" deep.
   2. Backstop To Dugout Fence:
      a) Height: 18' above grade.
      b) Mesh and wire size: 2-inch mesh, .148 inch diameter, steel core, vinyl coated with the top & bottom selvage knuckled.
      c) Top, bottom & two intermediate (four total) rails: Round, 1-5/8" OD
      d) Posts: Round, 3" OD (Maximum 10'-0" o.c.)

e) Tie wire: No. 9 gauge vinyl coated steel tie wire.
f) Footing: Concrete 2500 psi 12" dia. x 36" deep.

3. Outfield Fence from Dugout to Dugout:
   a) Height: 6' above grade.
      1) Note: Additional height and overhang may be necessary for protection of public safety of adjoining sites from foul ball trajectories.
   b) Mesh and wire size: 2-inch mesh, .148 diameter, steel core, vinyl coated with the top and bottom selvage knuckled. Provide mesh fabricated in one- piece width(height).
   c) Top rail: Round, 1-5/8" OD.
   d) Brace rail: Round, 1-5/8" OD. With 3/8" truss rod.
   e) Bottom Tension Wire: 6 gauge spring coil vinyl coated.
   f) Stretcher Bars: 3/16" x ¾" hot dipped galvanized steel, vinyl coated. One stretcher bar for each gate and end post & two bars for each corner and pull post.
   g) Tie wire: No. 9 gauge vinyl coated steel tie wire.
   h) Posts: (Maximum 10'-0" o.c.)
      1) Terminal; 3" OD.
      2) Line; 2 ½" OD.
   i) Footing: Concrete 2500 psi, Per ASTM F567

2.11 TYPE H Chain-Link Fence

A. The location of this structure is behind and around the discus circle. (Refer to DC 11 16 10 for plan layout.)
   1. Backstop height: 12"-0".
   2. Configuration: Forming a "U" shape around the discus circle in five equal sections of approximately 12'-0" each. Mesh and wire size: 2-inch mesh, .148 diameter, steel core, vinyl coated with the top and bottom selvage knuckled. Provide mesh fabricated in one-piece width (height).
   3. Top, bottom & center (three total) rails. Round, 1-5/8" OD
   4. Posts: Size determined for wind load. Round, 3" OD.
   5. Tie Wire: No. 9 gauge vinyl coated steel wire.
   6. Footing: Concrete 2500 psi 12" dia. x 36" deep.

B. Exit Hardware: BHMA A156.3, Grade 1, Type 1 (rim exit device), with push pad actuating bar, suitable for exterior use. Provide at locations indicated on drawings.
   1. Function: Entrance by trim when latch bolt is released by key or set in a retracted position by key.
   2. Mounting Channel: Bent-plate channel formed from 1/8-inch thick, aluminum plate. Channel spans gate frame. Exit device is mounted on channel web, recessed between flanges, with flanges extending 1/8 inch beyond push pad surface.

PART 3 - QUALITY ASSURANCE DURING EXECUTION

3.1 PROPER SEQUENCE AND SCHEDULING

A. Do not begin installation before final grading is completed.

3.2 INSTALLATION PROCEDURES/ADJUSTMENT PROCEDURES

A. Installation of chain-link fencing shall comply with:
   1. ASTM 567
   2. Florida Building Code, current edition w/ supplements
   3. Martin County, Florida and local codes

B. Installation instructions and procedures of Architectural fencing shall be by fencing Manufacturer. Spikes in the fabric shall be down.

3.3 SAFETY REQUIREMENTS FOR INSTALLATION

A. Fencing shall be installed in accordance with OSHA Standards.

3.4 PROTECTION DURING CONSTRUCTION

A. Care and protection of the construction site shall be made by the contractor to assure that there is no access by students, teachers or visitors at the facility.

END OF SECTION